A DESIGN FOR A COOPERATIVE POSTSECONDARY/ BUSINESS BACCALAUREATE DEGREE PROGRAM: AN APPLICATION OF GENERAL LIVING SYSTEMS THEORY

BY

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TABLE OF CONTENTS

PAGE

ACKNOWLEDGEMENTS iii

LIST OF TABLES viii

LIST OF FIGURES ix

ABSTRACT x

CHAPTER

I BACKGROUND AND JUSTIFICATION 1

- Purpose of the Study 7
- Delimitations and Limitations 9
- Definitions 10
- Literature Relevant to Business Motivation for Training, the Postsecondary Perspective, the Adult Learner, and Illustrative Cooperative Programs 12
  - Business Motivation 13
  - The Postsecondary Perspective 17
  - The Adult Learner 20
  - Illustrative Business/Postsecondary Cooperative Programs 28
- Procedures 33
- The Remainder of the Study 37

II BASIC CONSTRUCTS DERIVED FROM LIVING SYSTEMS THEORY 39

- Construct One 42
- Construct Two 43
- Construct Three 45
- Construct Four 46
- Construct Five 47
- Construct Six 49

III SPECIFIC PROPOSITIONS APPLIED TO COOPERATIVE PROGRAMS 52

- Specific Propositions That Pertain to Construct One: An Organizational Blueprint 52

PAGE

CHAPTER

III Specific Proposition 1 52
Specific Proposition 2 54
Specific Proposition 3 55
Specific Proposition 4 57
Specific Proposition 5 58
Specific Propositions That Pertain to Construct Two: Boundaries and Interface 60
Specific Proposition 6 60
Specific Proposition 7 62
Specific Proposition 8 65
Specific Proposition 9 66
Specific Proposition 10 69
Specific Propositions That Pertain to Contruct Three: Import of Matter-Energy into the System 70
Specific Proposition 11 70
Specific Proposition 12 72
Specific Proposition 13 73
Specific Proposition 14 75
Specific Proposition 15 77
Specific Propositions That Relate to Construct Four: Processing Inputs of Matter-Energy and Transforming Them to Outputs to the Environment 78
Specific Proposition 16 78
Specific Proposition 17 81
Specific Proposition 18 82
Specific Propositions That Pertain to Construct Five: Information Exchange 85
Specific Proposition 19 85
Specific Proposition 20 89
Specific Proposition 21 90
Specific Propositions That Pertain to Construct Six: The Management Function.......................... 92
Specific Proposition 22 92
Specific Proposition 23 93
Specific Proposition 24 94
The Specific Propositions Enumerated 96

IV THE DESIGN 99

Design Element I: The Organizational Blueprint 100
Design Element II: The Structure of the Consortium .. 103
Design Element III: The Program 114
Design Element IV: Financial Arrangements 116
The Consortium in Review 119

PAGE

CHAPTER

V CONCEPTUAL VALIDATION OF THE DESIGN FOR A COOPERATIVE POSTSECONDARY/BUSINESS BACCALAUREATE DEGREE PROGRAM 121

Responses to Statements Concerning the Organizational Blueprint 124
Responses to Statements Concerning the Structure of the Consortium 126
Responses to Statements Concerning the Program 126
Responses to Statements Concerning Financial Arrangements 129
Responses Concerning the Subjective Evaluation 131
The Results of the Conceptual Validation in Review 133

VI SUMMARY, DISCUSSION, AND CONCLUSIONS 135

Summary 135
Discussion and Conclusions 140

APPENDIX 147

REFERENCES 166

BIOGRAPHICAL SKETCH 173

LIST OF TABLES

TABLE PAGE

1 Responses of the Panel Members to Statements Concerning the Organizational Blueprint 125

2 Responses of the Panel Members to Statements Concerning the Structure of the Consortium 127

3 Responses of the Panel Members to Statements Concerning the Program 128

4 Responses of the Panel Members to Statements Concerning Financial Arrangements 130

5 Responses of the Panel Members to the Subjective Evaluation 132

LIST OF FIGURES

FIGURE PAGE

1 A Model of Adult Development 26

2 Organization Chart for a Business/Postsecondary Educational Consortium 107

Abstract of Dissertation Presented to the Graduate
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A DESIGN FOR A COOPERATIVE POSTSECONDARY/ BUSINESS BACCALAUREATE DEGREE PROGRAM: AN APPLICATION OF GENERAL LIVING SYSTEMS THEORY

BY

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In the 1960s and 1970s, adults began engaging in educational pursuits in growing numbers, causing educators to examine ways to accommodate them. Financial pressures on educational institutions in the next decade provoked further examination of educational delivery methods. Simultaneously, provision of training and education to employees became a significant business expenditure.

These factors provided the background for a 4-phase study concerning the development and conceptual validation of a design for a site-deliverable, cooperative postsecondary/business baccalaureate degree-granting program. Six constructs accounting for the operation of a complex organization were developed from the literature of general living systems theory. The constructs provided the basis for 24

specific propositions drawn from the literature concerning cooperative educational programs. A design for a postsecondary/business education consortium, consisting of 4 parts (organizational blueprint, structure, program, and financial arrangements) was constructed by a conceptual application of the specific propositions. A 5-member panel of experts judged the 32 design statements for their consistency with the constructs and specific propositions, and their necessity to the design. Also, the panel judged the design's potential for implementation.

On the necessity scale, the panel judged 26 of the 32 either "necessary" or "essential" to the design. The panel was "unable to judge" 5 statements; one was deemed of "questionable necessity." On the consistency scale, 27 statements received positive scores of 4 or 5; the panel was "unable to judge" 5 statements. The panel concluded that the overall design contained shortcomings but could be implemented.

The shortcomings related to financial arrangements, the liberal arts component of the curriculum, and the consortium concept as a method of delivery.

It was concluded that general living systems theory provided an adequate basis for such an endeavor and the literature relative to cooperative programming and the conceptual validation supported both the timeliness and the potential of the design.

CHAPTER I

BACKGROUND AND JUSTIFICATION

Within the context of the histories of colleges and universities the phenomenon of adults in significant numbers engaging in postsecondary education for credit is a recent one. During the decades of the 1960s and 1970s the number of adults involved in educational pursuits were such that educators responded by attempting to increase their understanding of the adult student and by making a variety of adaptations in the traditional postsecondary institution. It was during this period of time that terms such as andragogy, the study of adult learning, appeared in educational literature (Knowles, 1973[b], p. 43). The concept of the lifelong learner influenced Cross (1981) to introduce the term, "blended life-plan" because "work, education, and leisure are concurrent rather than alternating, at all points throughout life" (p. 12). Apps (1980) organized the events of the 1960s and 1970s into six major influences that had a profound effect on adult education:

1. The median age in the United States increased. The 24 and younger age group, the group from which traditional university students originate, numbered 93.9 million in 1975; by 1990 it was predicted that this group would number 89.9 million. In 1975 there were 97.3 million people in the 24-64 age group; by 1990 this group was predicted to include 123.8 million people (p. 4). Thus, university

administrators were faced with the incompatible situations of a decline in the number of potential undergraduate students, an increase in the number of non-traditional adult students, and existing university programs whose delivery methods were deeply ensconced in tradition.

2. Inflation forced Americans to examine their total life styles particularly in the areas of energy consumption, housing, and the traditional family constellation. As they attempted to avoid complete alteration of their life styles, and to gain economic advantage, many people sought educational opportunities as a means to better paying jobs. Therefore, demands for these educational opportunities increasingly came from sources which had not previously been influential, that is, from working people. However, it was also noted that not everyone was able to afford education at this level. The result was a dichotomy of people in their working years--those who could afford to partake in higher education, and those who could not (p. 5).
3. The growing consumer movement affected a variety of services, including education. The demand for quality, an outgrowth of the consumer movement, influenced a trend to mandatory continued education in the medical, teaching, and legal professions, forcing established professionals back to school (p. 6).
4. The status of women changed, a factor which encouraged women to involve themselves in here-to-fore male dominated occupations, and in the workforce generally. Motivated by economic and social changes, adult women entered educational institutions in unprecedented numbers (p. 7).

5. The political mood grew more conservative, causing legislators to be more and more cautious in providing public money for all social programs, including education (p. 7).
6. The mood toward education became mixed. The public demanded, and in many instances, received, a "back to basics" approach to education. This mood caused basic adult literacy and job training to receive increased taxpayer support. At the same time there was much public interest in maintaining knowledge of the arts and in increasing self-awareness. Public criticism of the processes and products of educational systems was accompanied by a notion that education could occur in places other than a classroom (p. 30).

The United States was not the only country experiencing an aging population. The rise of the median age in the United States was reflected in Canadian figures where the 18-24 age group was projected to decline approximately 21% from 1982 through to the 1990s (Zsigmond, Picot, Clark, & Devereaux, 1978, p. 4).

An obvious influence on adult participation in education, although not included in App's assessment of the trends, was the gradual societal move toward the "blended life-plan of work, education, and leisure" (Cross, 1981, p. 12). Not only were adults demanding new services of educational institutions, their changing needs affected business and industry leaders as well. The result was the existence of a group of industrialized nations whose workers had attained unprecedented high educational levels (N. R. Smith, 1980, p. 314).

Increased worker educational attainment and the additional factor of those industrialized nations perennially short of skilled workers created a paradox for industrial leaders. In an attempt to respond to the changing worker and to meet their own manpower needs, businesses of all sizes added a training element to their organizations (Luxenberg, 1980, p. 314). This trend grew to the extent that it has been estimated that over $4 billion has been spent annually in the United States on education and training by business and industry (Schwaller, 1980, p. 322). American Telephone and Telegraph (AT & T) alone was reported to spend about $1 billion per year in training its employees (Luxenberg, 1980, p. 314). The national yearly spending on training is only a fraction of the estimated annual $100 billion spent on the entire scope of industrial training that includes apprenticeship, on-the-job training, new and first job training, and management training (Corrigan, 1980, p. 328). Maxwell and Currie (1984) reported that among Canada's 30 largest companies, in-house training expenditures were $1 billion a year, creating a large potential market for postsecondary institutions (p. 23). In addition to company courses, most businesses are committed to reimbursing employees for tuition costs of approved courses taken outside working hours (McQuigg, 1980, p. 324; Schwaller, 1980, p. 322). Some major industries even began designing in-house courses that would earn college credit for employees (McQuigg, 1980, p. 325).

The aforementioned concepts of the life-long learner and blended life-plan were only a small portion of a much larger interest in the new adult student of the 1960s. Until that period, the accepted view of adults was that they learned less efficiently than did children and adolescents. The growing number of adults in educational settings inspired a small group of educators to re-examine the common notion of diminishing ability to learn. Because the study of adult learning was new, the approaches to the research were as varied as the number of researchers. However, the result was an understanding of the adult that disallowed the view that adults did not learn well. By the early 1980s a number of adult learning theorists had emerged. Although their approaches to the discipline continued to vary, the findings provided at least the beginning for further study and a broadened insight for teaching practitioners.

As suggested at the outset, postsecondary leaders have attempted some adaptations to the changing demands of adult learners and to the expanded needs of the industrial complex. One such adaptation is the growing practice of colleges and professional or technical associations cosponsoring educational programs. For example, Baker (1980) reported a range of intensity of cooperation between banking associations and colleges, with the intensity varying from mere use of institutional facilities for association seminars to college provision of cooperative degree programs for full-time bank employees.

Labor unions have recognized that advantageous access to degree granting programs can be arranged for their members through program agreements with established university systems. Empire State College of the State Universities of New York (SUNY) established a center in Manhattan, that, as part of its external degree program, offered special services for labor union members (Houle, 1973, p. 98). In a more general commitment, the international consortium, To Educate the People, identified labor unions as one of its five constituencies. Further, one module of the University Studies/Weekend College (US/WC) prototype within the consortium was specifically designed for United Auto Workers members in Detroit (Feinstein, 1979).

According to the literature of postsecondary education, the specific needs of adult students have yet to be consistently addressed. Traditional universities have continued to concentrate on the 18-24 year old full-time students who attend lectures during the day, on a campus. Yet the reality of the aging population was confirmed by a 1981 Canadian Parliamentary Task Force. "There are already more adults than young people in educational programs in British Columbia, and before the end of this decade this should be the case in the majority of our provinces" (Allmand, 1981, p. 85). Nontraditional universities such as Britain's Open University and Canada's Athabasca University have attempted delivery systems that allow students to complete courses off campus and in their own time, and in doing so have contributed much to innovations in presentation of materials. However, because of the very nature of the delivery system, it is difficult to ensure that students have regular access to instructors and to supportive groups of peers. Although activity in postsecondary/business cooperative projects gained increased attention, the evidence was that these projects were designed for specific groups of people within equally specific organizations and often lacked instructional elements for the adult audience. The issue of a rational and consistent method of providing cooperative programs that met business manpower needs and the special needs of adult learners, while also ensuring checks and balances among the cooperating organizations, appeared not to exist.

The January, 1980, edition of the Phi Delta Kappan, a leading educational journal, was indicative of the growing activity in cooperative postsecondary/business programs; the major section of that issue was devoted to the subject of such cooperative efforts. However, that issue and other recent reports demonstrated that cooperative programing, although expanding, remains largely fragmented, and a product of planning in isolation. These efforts appeared not to take into account in a logical and consistent way the environmental setting in which the programs function and the interaction of the various subsystems of the organizations involved. (A further discussion of cooperative programs is found in Chapter Three).

Much of the thinking since the 1950s concerning organizations and how they function has reflected the concept of general living systems theory. Ludwig von Bertalanffy, a biologist, in 1950, first introduced the idea that a way of thinking about living organisms' systems could be equally useful in thinking about contrived systems such as organizations (Owens, 1981, p. 61). Subsequently, general living systems theory has been used to study organizations in the fields of

> pharmacology, medical diagnosis, psychodiagnosis, family therapy, hospital management, management information systems, training of corporate executives, political science, military science, ecology, regional planning, national planning, architecture, planning of electronic communication networks, automated libraries, and world wide transportation systems. (J. E. Miller & J. L. Miller, 1981, p. 55)

Considerable attention has also been given to applying general living systems concepts to educational organizations (Owens, 1981, p. 61).

Purpose of the Study

Given the conditions that exist with the trend toward a blended life-plan of learning, work, and leisure; the demands of the industrial complex; and the seeming shortcomings of existing programs; the purpose of this study was to design and conceptually validate a postsecondary/business cooperative, site-deliverable, baccalaureate degree granting program. The design was intended to be consistent with what is often referred to as systems theory, general systems theory, or more specifically, that portion of systems theory that deals with living systems and that is generally referred to as general living systems theory. Attention was given to the learning needs of adults and to fulfilling industry requirements for knowledgeable employees. The design encompassed the goals and values of educational institutions and business organizations and was constructed in such a way that the prime goals of each partner were not diminished.

The strength of general living system theory as a means of examining organizations lies within its framework that allows consideration of a multitude of complex organizational aspects simultaneously (J. G. Miller & J. L. Miller, 1981, p. 55). Further, because a researcher can consider an organization in its entirety, the tendency to ascribe events to a single cause can be avoided (Owens, 1981, p. 62).

In view of the need for further development in continuing education opportunities for working adults that involve the industrial complex and universities and the shortcomings of existing programs, and the promise of the structure provided by general living systems theory, the study herein was undertaken. Even though the design was intended to be generic, the researcher was particularly interested in its application in Canada. The general Canadian concern in this area was demonstrated in the fact that Alberta Advanced Education, the provincial government department responsible for postsecondary affairs, provided some funding for the study, in anticipation that an innovative design might provide the basis for creating less costly delivery mechanisms.

Delimitations and Limitations

The delimitations observed in developing the design were as follows:

1. The general systems theory constructs were derived primarily from the literature since 1970.
2. The specific propositions relating to the design of the cooperative programs were confined to those that could be logically derived from the general systems theory constructs, were definable given the reality of the demands of the cooperating institutions, and supported by reports of practice in the literature of university/industry cooperation and nontraditional university degrees.
3. The design developed was confined to the following dimensions: meaning of the degree, the target population, legal control and governance, financing, content, delivery methods, support services for students, appraisal of student progress, program structure, and administration.
4. The design was confined to cooperative baccalaureate degree granting programs between those universities and colleges that are accredited and those business entities that have an identifiable unit for carrying out a training function.
5. The test of the design was confined to a conceptual validation using the expert opinions of a 5-member panel. The panel was composed of a senior manager responsible for human resources in a large business, the vice-president (recently retired) of a university, a university professor with a joint appointment in a faculty of business management advisory institute and a faculty of extension, a government official responsible for a provincial

community school program, and a private sector consultant whose specialty was manpower planning. The opinions of the panel were limited to judgments within the confines of specific cooperative program propositions that were logically derived from the constructs of general living systems theory. The specific cooperative program propositions were substantiated by research reports and publications concerning practice in the administration of cooperative programs and implementation of nontraditional degree programs. The panel was chosen on the basis of apparent expertise in their respective fields, and, of course, their willingness to participate.

In terms of basic limitations, the design could not be field tested. Thus, the study suffered from the lack of validation and evaluation that field testing can provide. Since the design represents the creative efforts of the individual researcher, another weakness is the extent to which she was able to employ the use of logical processes to derive and build a design. However, the check on this limitation was the conceptual validation of the derivation by the expert panel.

Definitions

Baccalaureate degree. For the purpose of this study a baccalaureate degree is the equivalent of a four year program involving experiences in the sciences, social studies and humanities, and some specialization in a single field.

Concept. Concept is used to denote those ideas or abstractions formed by generalizations from particulars (Kerlinger, 1973, p. 28).

Consortium. A consortium is an organization composed of an association of institutions of higher education (two or more) that provide a range of higher education credit courses. The consortium exists to deliver degree-granting programs to businesses; thus, for each program contracted, the institution that will ultimately grant the degree will assume a lead role.

Education. This term refers to the development of information, concepts, and intellectual abilities (Schwaller, 1980) generally associated with activities that take place at a college or university.

Education/training. This refers to activity that includes a broad program containing elements of both education and training as they are defined for this study.

General living systems constructs. A construct is a concept that is "deliberately and consciously invented or adopted for a special scientific purpose" (Kerlinger, 1973, p. 29). The constructs of general living systems theory have been adopted to systematize the concepts that are central to the theory.

General living systems theory. For the purposes of this study, the general living systems theory is as defined by J. G. Miller (1978):

> General systems theory is a set of related definitions, assumptions, and propositions that deal with reality as an integrated hierarchy of organizations of matter and energy. General living systems theory is concerned with a special subset of all systems, the living ones. (p. 9)

Matter-energy. Because of the relationship between matter and energy they are referred to together as matter-energy. Matter is anything that has mass and occupies physical space. Energy is the ability to do work. It can be neither created nor destroyed, but can be converted from one form to another (J. G. Miller, 1978, p. 11).

Nontraditional degree. Such a degree is defined as one that has all or a combination of several of the following elements: an unorthodox delivery system, innovative curriculum, students working independently, unusual admission and evaluation requirements, and different than typical students.

Organization. An organization is viewed as an open system in interaction with its environment and composed of five primary components: goals and values, technical, structural, psychosocial, and managerial subsystems (Kast & Rosenzweig, 1979, p. 109).

Specific cooperative program proposition. A specific cooperative program proposition refers to a clear statement for program implementation derived from the general living systems constructs and that will apply to an element of a cooperative postsecondary/business baccalaureate degree program.

Training. As it is used in this study, the term refers to those activities usually associated with employee development and that entail measurability, narrowness of subject matter, relevance to a particular time and place, well-defined range of use, and efficiency of information transfer (Branscomb & Gilmore, 1975, p. 226).

University. This is an accredited postsecondary institution that offers, at minimum, a 4-year baccalaureate degree.

Literature Relevant to Business Motivation for Training, the Postsecondary Perspective, the Adult Learner, and Illustrative Cooperative Programs

To provide the reader a perspective for understanding the need for a cooperative program and the literature in regard to dimensions of the cooperative program, in the sections following, attention is given to four relevant topics. In the first section, the motivation of the business sector for engaging in degree programs is identified. The section immediately following focuses on the university perspective. This is followed by a discussion of the adult learner. Lastly, some illustrative cooperative programs are identified and described.

Business Motivation

As has been noted, there is a growing need for lifelong learning opportunities that has been created by changes in societal expectations as well as by forces operating within business. Those forces within business can be traced historically to 1913 when the National Association for Corporation Schools was founded to serve the interests of the member companies who were heavily involved in training. Early business motives for training were primarily to upgrade employee literacy both in American workers and in the large numbers of immigrant workers of that period (Branscomb & Gilmore, 1975, p. 222).

The modern business sector appears to have no more philanthropic motives in committing extensive resources to training and education (McQuigg, 1980, p. 324; Peterfreund, 1976, p. 33). In a seemingly isolated report, Broderick (1982) described a training goal at General Motors (GM), where there was some interest in "promoting . . . value systems, quality of life, and integrity aspects that permeate the workplace" (p. 23). However, in general, the growing business concern for employee training and education can be attributed to the "accelerated pace of social and technological change" (Branscomb & Gilmore, 1975, p. 222). Further, because it is estimated that the volume of scientific and technical information doubles every eight years, business spends 74% of its education budget on training for technical change (Schwaller, 1980, p. 323).

A review of reports on business training between 1975 and 1984 revealed similarities in motivation for training and education. Branscomb and Gilmore (1975) included six elements in business motivations to educate and train:

1. to introduce new employees or newly appointed managers to the organization, style, and objectives of that corporate community, and all managers to corporate changes;
2. to incorporate and diffuse rapid technological change, particularly that resulting from scientific and engineering innovations that are in their first embodiment of a proprietary character;
3. to sustain professional vitality, that includes motivation and basic professional skills, to ensure personal professional growth and, importantly, career path flexibility;
4. to avoid the cost of travel and released time for training at outstide institutions;
5. to exploit the increased motivation of on-the-job training that allows newly acquired skills to be immediately practiced; and
6. to fulfill legal and social responsibilities to expand employment and advancement opportunities for minorities and the disadvantaged (p. 223).

Peterfreund (1976) added two conditions that, if they became prevalent, would influence individual companies to increase attention to training. The first condition is business commitment to promotion from within; second is the existence of a work mission that calls for employee independence and/or representing the company to the public.

Schwaller (1980) indicated that education and training has proved a useful recruiting tool during times of labor shortages in skilled work (p. 323).

An ongoing requirement for available skilled manpower appears to be the major compelling force behind all business training. Kurland (1978, p. 380) attributed the constant demand for skilled manpower to rapid social and technological change and a concomitant inability of education and business to forecast accurately manpower requirements and to plan education accordingly. Lusterman (1978), in a more optimistic stance, viewed education and training as a management planning tool to ensure continuing availability of productive and skilled manpower (p. 8). Growth, competitiveness, and increasing complexity in the banking industry were the predicating factors in Baker's (1980) description of the national manpower development activities. Luxenberg (1980), McQuigg (1980), and Schwaller (1980) all concluded that the unprecedented activity in industrial training and education stemmed from a pressing need for a skilled workforce.

Although still eventually in the name of business profit, rewards for business training, other than a skilled manpower pool, were evident in the literature. Evidence was presented that employees who were provided training opportunities increased in self-esteem and job satisfaction and hence, in productivity (Chaney & Simon, 1978, p. 21). N. R. Smith (1980) saw employee training as a humanizing force that adds to employee self-esteem thus reducing turnover costs and adding to productivity (p. 313). The life-enhancing qualities of education that affect the workplace, an attitude espoused by GM, was previously noted (Broderick, 1982, p. 23). Perhaps the most accurate summation of the training and education function in business and industry was provided by Corrigan (1980) who described human resource development as increasing "the value of those employed by the company. This value contributes to profit. Hence training is an investment in people for profit" (p. 328).

Indications are that within business training and education, more attention is paid to management development than any other kind of training (Dean, 1980, p. 319). McQuigg (1980) found that in 1976 $1.2 billion were expended on management development and evaluation. She reported an expectation that this segment of training would reach a cost of $2.2 billion by 1982 (p. 324). Schwaller (1980) reported an estimate that this expenditure was 24% of total expenditures for training and education (p. 323). Further, although the number of people who are in management positions was anticipated to increase by only 10%, management training was expected to grow by 83% in the 1976 to 1982 period. N. R. Smith (1980) reinforced the idea that the management group will continue to contain the largest single source of labor shortage (p. 311). The factor of business practices becoming increasingly complex has caused university-based management programs to respond with a broadened base of education for their students. Although this situation has provided new entries into the management field with an extensive scope of preparation, Broderick (1982) reported that companies were finding that their mid-career executives lacked similar knowledge (p. 20). Thus, to provide senior management staff with contemporary expertise, companies were finding it necessary to provide retraining through internal management programs.

The Postsecondary Perspective

With the evidence that colleges and universities were becoming involved in nontraditional degree granting programs and in a number of cooperative educational arrangements in the business sector, the writer reviewed recent higher education literature in an attempt to determine what motivations exist for such activities in the postsecondary education community. Declining enrollments and the subsequent need for retrenchment were the most prevalent forces indicated, with the growing populist attitude towards education receiving considerable attention, as well.

From a theoretical perspective, Whetten (1981) reported that institutions can deal with declining revenues by either cutting back or altering the mix of educational services (p. 82). Although innovative programing was not included in Whetten's examples of what constituted "altering the mix," several other writers viewed that as a possible solution. Indeed, external pressures on the institutions could well be such that changes in traditional program offerings are inevitable. For example, Sicuro (1976), citing increasing social pressure on institutions to expand educational opportunities, indicated a movement to re-examine "who can be a student; and when and what college is" (p. 52). Labor union pressures for programing for their members and union support of educational activities were deemed by Barasch (1981) to have the potential to affect higher education as markedly as did the land grant support of the 1800s (p. 42). The predicted trend of ever-declining enrollments has had the effect according to Broderick (1982) of increasing the willingness of postsecondary institutional leadership to become involved in industry training (p. 20).

Maxwell and Currie (1984) discussed several additional recent phenomena that have had a financial impact on Canadian universities. Because of the predicted decline in the 18 to 24 age group, no physical growth on universities' campuses was planned. At the same time, financial commitments from the provinces were cut back. However, unexpectedly high unemployment rates had a serious impact on this situation. Because of the lack of jobs, university enrollments grew from 11.5% in 1979-80 to 13.5% in 1983-84, the growth attributable to more young people attending and older people choosing a university program over unemployment (p. 16). The pressure on the University of Calgary provides an example of common conditions. Enrollment at the University of Calgary grew by 37% between 1980 and 1984 while provincial funding increased by only 10% (N. J. Smith, 1985, p. 91).

Branscomb and Gilmore (1975) described a shift in lines of responsibility between business and universities. In the past, the shift was attributed to rapid technological growth that forced industry to react with training more quickly than universities could. In part, universities were viewed as being in the dangerous stance of "not being in a position of guiding developments, but rather are bystanders" (p. 232). Although some disadvantages to universities could exist should they enter cooperative arangements, not only do they have a great responsibility, they stand to benefit.

Doll (1980) recommended that institutions of higher education heed the signs of change. His interpretation of the crises of diminished financial support and loss of public confidence plus the dramatic growth in technology was that corporate education could well expand to fill the breach leaving traditional higher education to suffer further loss of credibility. Doll viewed the growth of business involvement in education as part of "more far-reaching historical, economic, and social changes" (p. 333). Further, during times of change, many institutions are vulnerable to shifts in priorities. Higher education was seen as one of the most vulnerable for the following reasons:

1. Higher education must achieve a "fit" between itself and the needs and expectations of society. If the fit does not exist, there is a high probability that support for higher education will diminish.
2. It is dependent upon individuals being able to afford personal education costs such as room and board.
3. It is dependent upon the taxpayers' ability and willingness to accord a high priority to education while costs of the basic necessities of life are rising rapidly.
4. It has become increasingly dependent upon the nation-state. If the financial strength or political power of the nation-state changes radically, so will the viability of education.
5. It can always be trimmed without the immediate sense of social or personal deprivation that follows trimming of fire or police protection, public water supply, sewage services, or streets and highways (p. 333).

There were clear indications in the literature that rapid technological change, growing public dissatisfaction with traditional higher education, and concomitant lessening financial resources together provide an auspicious moment for carefully planned collaboration. The interdependence was pointed out by Hansen and Schergens: "Education propels our economy; it prepares the work force and maintains a generally well-informed populace. But education is also a major beneficiary of that economy" (1982, p. 694). McQuigg (1980) provided a useful summation:

> The university and the corporation have much in common. Certain of their objectives are similar. Each has a responsibility to enhance the quality of life. Even though the two institutions may use different means to bring about this result, they will succeed best if they move forward together, each learning from the other, each making its appropriate contribution. Above all, each must recognize that cooperation, not competition, is the best interest of the people they serve. (p. 325)

The Adult Learner

As was indicated, the study of the adult learner is new. As such, the research reflected widely differing approaches to the field. One of the earliest theories regarding adult learning attempted to explain the learner in relation to motivation. Learners were classified into three subgroups, each subgroup having an identifiable emphasis.

1. Goal-oriented learners: Use education to achieve clear-cut purposes. Usually embarked on education in late twenties or later.
2. Activity-oriented: Engaged in learning for very personal reasons, often bearing no relation to the formal description of the activity. Usually begin as a result of a pressing concern.
3. Learning-oriented: Seek knowledge for its own sake. Have been involved in learning activities all their lives (Knowles, 1973[b], pp. 35-36).

One method of examining adult learners is to determine who are the learners. Cross (1978) synthesized the sociological and ethnographic studies on adults engaged in organized learning of some sort. She found that there were similar patterns of "interest and participation" across studies. The studies reported were concerned about "organized instruction" (p. 3). The findings contained few surprises:

1. About 30% of the adult population can be classified as learners.
2. These learners are young, white, making satisfactory incomes, and employed in technical and white collar occupations.
3. Learners are well-educated; 85% of adult learners have at least a high school diploma.
4. The best prediction of participation in learning activities is prior education; a college graduate is about four times as likely to participate in some form of organized instruction as a high school drop out (p. 4).

Recent attention to developmental tasks of adulthood has provided useful information in organizing instruction and in anticipating the needs of adult learners. Some of the developmental hypotheses bear limited resemblance to earlier psychological models, while others take vocabulary from psychology but appear to have emanated directly from research with adults.

Tough (1979) approached the motivational issue by classifying reasons for adult learning:

1. Preparing for an occupation and then keeping up the learning is centered around learning activities in preparation for a new occupation or job, a promotion, or a new responsibility.
2. Specific tasks and problems of the job. These learning activities are self-planned because the knowledge is useful immediately and may be unique to the job. Often the learning takes more time than the project for which it is intended. However, the learning is

transferable to many other situations.

3. Improving some broad area of competence. This is a specific learning or skill which can be applied in many areas of a person's life: on the job, with his/her family, in his/her voluntary community work.
4. Learning for interest or leisure.
5. Curiosity or a question about a certain subject matter. Many learning efforts begin with a question or a general interest in subject (pp. 35-39).

An important way of examining adult learning is, of course, through learning theory. Some work has been done in extending the theories of child learning in order to explain adult learning patterns. This attempt continues. Long (1980) reported that recent Piagetian work had at least opened the door to questions that this theory could be stretched into the adult span. This course is, as yet, unfruitful.

More immediately useful knowledge has come from those who have developed statements about adult learning theory from a study of adults. Of all the researchers into the adult learner, Knowles is the acknowledged leader. A post-Knowles reader will find "shades" of Knowles in much of the literature. The basis of his contribution--the study of andragogy--was borrowed from Yugoslavian colleagues:

> Andragogy is a differentiation between the assumptions that have traditionally been made by those who practice pedagogy in contrast to the assumptions made in andragogy.
>
> As an individual matures, his need and capacity to be self-directing, to utilize his experience in learning, to identify his own readiness to learn, and to organize his learning around

> life problems, increasingly from infancy to pre-adolescence, and then increasing rapidly during adolescence. (Knowles, 1973[a], p. 43)

The study of andragogy contains four assumptions which clearly distinguish pedagogical study from the study of adults.

1. As a person grows and matures, his self-concept moves from one of total dependency to one of increasing self-directness. Andragogy assumes that the point at which an individual achieves a self-concept of essential self-direction is the point at which he psychologically becomes an adult--the individual develops a deep psychological need to be perceived by others as self-directive. Thus, when he finds himself in a situation in which he is not allowed to be self-directive he experiences a tension between that situation and his self-concept.

2. As an individual matures he accumulates an expanding reservoir of experience that causes him to become an increasingly rich resource for learning and at the same time, provides him with a broadening base to which to relate new learnings. In the technology of andragogy, there is decreasing emphasis on transmittal techniques of traditional teaching and increasing emphasis on experimental techniques which top the experience of the learners and involve them in analyzing their experience. As a person matures he increasingly defines who he is by his experience. So in any situation in which an adult's experience is being devalued or ignored, the adult perceives this not as rejecting just his experience, but rejecting him as a person.

3. As an individual matures, his readiness to learn is decreasingly the product of his biological development and is increasingly the product of the developmental tasks required for his social roles.

4. Adults tend to have a problem-centered orientation to learning, the adult comes into an educational activity largely because he is experiencing some inadequacy in coping with his current life problems. He wants to apply tomorrow what he learns today. (Knowles, 1973[b], pp. 45-48)

Alan Tough and his colleagues at the Ontario Institute for Studies in Education broadened the way of thinking about adult learning. Their studies led them to believe that more than 70% of the adult learners plan learning projects outside of an organized learning experience (Tough, 1978, p. 9). A learning project in Tough's (1979) terms is

> a sustained, highly deliberate effort to learn. It is a series of related episodes, adding up to at least seven hours. In each episode, more than half of the person's total motivation is to gain and retain certain fairly clear knowledge and skill, or to produce some other lasting change in himself. (p. 7)

Tough's perception of the adult learner is that the learner is in control. The learner plans his/her own learning sequence and the function of the "professional" is to be a helper in the process.

Weathersby and Tarule (1980) proposed a model which belongs to the latter group. In their definition of adult development it is possible to see the major differences between traditional theories of child development and those of adult development. Inherent in the proposal is the concept of adults in control:

> Adulthood entails a continual process of development, changes in one's view of the world and in one's beliefs, which often result in a change in the way one chooses to act and to be. Change of this order of magnitude is truly a transformation because it signals ultimately a complete reshaping of the ways in which one has assigned meaning, not only to the various events, but to the whole sense of one's life and living. (p. 23)

They developed four possible developmental stages to explain adult change; the stages are not necessarily sequential. Within each stage are three dimensions: the psychic work of the individual, the individual's own sense of where he or she is in a personal process of change, and the current major issue that is personally important (p. 25). An adapted view of the general model appears in Figure 1.

As mentioned, Weathersby and Tarule did not view the stages as necessarily progressive; individuals may not pass through them in order or may skip steps (p. 25). From a broad perspective, educators must recognize that they are not dealing with a homogeneous group. On an individualized level it may be useful to identify where a student is and design future learning stages appropriately (p. 33).

Weathersby (1978) explained the importance of recognizing adult life stages and their effects on people's learning interests. She saw life stages as "age-linked periods of stability and transition embedded in our experience of living" (p. 19). During each life stage there are certain concerns and certain tasks and "significant learning" takes place in each life stage (p. 19). Movement from one stage to another entails transition, an important concept when one considers Weathersby's findings that 79% of students interviewed in a study reported that they were in a transition period; that is, they had just made major changes and were consolidating, or were about to experience great change. The students in the study were not consistent in the timing of their enrollment in relation to transition (p. 2). Whatever the period, clearly an education setting is perceived by many as a place where it is permissible to be reflective if that is what is required (Weathersby, 1978, p. 21).

Cross (1981) introduced a model for understanding about the adult learner, classing it "tentative" with the hope that this model would lead to further testing and expansions (p. 254). The model could be portrayed as a matrix with the personal characteristics of physiology/aging, sociocultural/life phases, and psychological/developmental stages along one dimension. The second dimension would contain the situational characteristics of part-time learning versus full-time learning and voluntary learning versus compulsory learning. The personal variables are continuous while the situational characteristics are moderately discrete. Cross called for an "adaptive and adjustive" response on the part of educators and urged them to capitalize on physiological processes. In the same vein, the life phases stage can

STEP		CHARACTERISTICS OF THE STEPS	TASKS	EDUCATIONAL IMPLICATIONS
Diffusion	The psychic works of the individual; individual's sense of where he or she is in the change process; the current major issue that is important.	An active struggle to grow. Events seem to be happening at a very fast pace; ambivalence and doubt; former meanings disintegrate, new ones not freely formed, accumulate	Create new meanings.	The general confusion may mean that long-term concentration is impaired.
Dissonance		Clarity and focus; a potentially dangerous one-tract mind phenomenon.	Focus on the aspect of personality that is changing.	Often accompanied by intense engagement and purposeful action; new learning and significant educational experience may occur.
Differentiation		Has qualities of integration; a sense of balance; confidence in one's ability to create growth.	Nurture the new person.	Clarity enables fairly clear commitment, formulation of goals, a point of orientation.
Coherence		Stability; activity has immediacy: a sense of control of the pace of growth; neither a sense upheaval nor of optimism.	Care for oneself and grow.	A tendency not to plan too far ahead; learning fills time; students may seem vague about their educational purposes.

Figure 1. A Model of Adult Development Derived from Adult Development: Implications for Higher Education by R. P. Weathersby and L. M. Tarule, 1980, Washington, D.C.: American Association for Higher Education, pp. 19-25.

be capitalized upon, especially those points in the life stage that are conducive to learning. The educator is admonished to be a "challenger" in the light of what is known about developmental stages. Each adult should be encouraged to move towards the highest stages of development in each developmental stage (Cross, 1981, pp. 239-242).

Unfortunately, the implications for adult educators of what is known about learning are not clear. Cross (1981) appeared to present a model for understanding the adult learner for researchers rather than practitioners (p. 240). Dimensions of the adult learner otherwise are presented in a fragmented fashion and occasionally are contradictory one with another.

The literature contained many messages for the educator. Weathersby and Tarule (1980) cautioned educators to recognize first that they were not facing a homogeneous group of people (p. 33). Individuals can plan their own educational sequencing and content on the basis of where they are developmentally. Weathersby and Tarule (1980) also recommended a matching process whereby the institution, program, or classroom fit the student's developmental level and meet his or her current needs (p. 47). Knowles (1978) envisioned the learner moving from the concept of being engaged in schooling towards a concept of making use of learning resources available to him or her as a self-directed learner (p. 163).

Building on the Knowles concept of the self-directed learner, and as a result of his research, Tough (1979) formulated three philosophical statements for an educational institution to consider in designing adult learning:

1. The student will initiate his own learning projects in the face of a problem or a curiosity. These projects will be initiated as a result of stimulus in the learner's natural environment.
2. The student will understand that such learning projects are natural and useful and need not occur in a formal education setting.
3. The student will become more competent at setting his own learning goals and at initiating help for these projects (p. 149).

Finally, West and Glass (1981) indicated that an affiliation to a particular understanding of human motivation will determine many of the policies established by an educator in an institution (p. 167). A reasonable further step is that an educator of adults must have a firm understanding of his or her own beliefs regarding adult development, motivation, and learning theory in order to develop a cohesive plan for how the adults in his or her domain of responsibility will be provided with learning opportunities.

As is demonstrated in the next section, despite this considerable interest in the study of the adult learner and the resultant growing understanding of adults' unique instructional needs, few institutions of higher education have varied from the traditional prescribed curriculum presented in lecture hall fashion. Moreover, there has been no consistent attempt to address the needs of adult students even among those who have designed special programs for adults.

Illustrative Business/Postsecondary Cooperative Programs

An indication of the enormity of the impact of adults engaging in postsecondary education and business-based training was presented in the "Background and Justification" section. The business sector's various interests in training were investigated with the conclusion that the major "payoff" for business training lies in its preparation of a skilled workforce. The literature contained indications that there was a growing pressure on postsecondary systems to adapt traditional program offerings to the needs of adults especially in light of the threat of declining enrollments. Finally, the beginnings of cooperative efforts between postsecondary institutions and business were described.

Although the theories arising from studies of adult learning are in their infancy, there was clear indication that not only can adults learn effectively but that they have identifiable learning needs that should markedly affect the manner of their instruction. In addition to learning needs, adults have social needs that place limitations on where and when they can engage in formal learning experiences.

While there was some acknowledgement that all would benefit from cooperative postsecondary/business baccalaureate degree programs, such cooperation is not consistently evident. Those programs that exist have apparently failed to take into account all the elements necessary to ensure the satisfaction of all the constituents. For example the Wayne State University Studies/Weekend College (US/WC) program, a leading member of the To Educate the People Consortium, is based on a model that, "united a coherent, interdisciplinary, theme-based curriculum to which adults can relate life experience; a delivery system convenient in time, place and manner of courses, and an organizational structure that is student centered" (Feinstein, 1979, p. 336). Feinstein (1979) reported that the program was cost-effective, operating on tuition revenue solely. Unlike most adult programs, US/WC employs a full-time teaching staff as well as a full-time staff of advisor-recruiters (p. 339). Additional services such as learning and study skills are provided as an extension of the curriculum as the student population is largely composed of blue collar and minority workers with less than positive previous school experiences (Bertelsen, Fordham, & London, 1977).

In a major United Nation's Education, Scientific, and Cultural Organization (UNESCO) evaluation of the US/WC program Bertelsen, Fordham, and London (1977) reported a number of concerns about the program that were germane to the present study. While the faculty were employed by Wayne State University, the full-time appointment to the US/WC program created a sense of isolation from the prime institution. Further, it was found that many staff members felt that the value of their work was questioned by colleagues on the basis of a perceived lack of rigor in the program. The evaluation team made a strong recommendation that commitment to the program should come from the highest authorities in the university. Further, the disparity between university expectations for faculty academic background and the skills required to teach the working class students in program was a concern. The doctoral degree necessary to job security and advancement was considered to be a possible liability in terms of teaching the educationally deprived adult (pp. 13-15).

Feinstein (1979) included additional research that found the US/WC graduate has not only had very little moral support from their employers in their endeavours, they also experienced very little job mobility after graduation (p. 366). It should be pointed out that the US/WC program was not a cooperative program as previously defined.

That is, the program received no joint sponsorship from industry. Therefore, it could be concluded that the US/WC graduates enjoyed little job mobility, at least partially as a result of their employers having no vested interest or part in their further education.

Blaze and Nero (1979) published the results of their survey of degree programs designed for adults. They found 120 such programs in the United States that to varying degrees met the criteria for accessibility, academic credit for prior learning, and special program design. However, none of the programs surveyed possessed formal business involvement, thus excluding them from further consideration in the present study.

A kind of cooperative effort is evidenced in the practice of corporations designing in-house training programs that will earn college credit for their participants. Many of the participants lack a baccalaureate degree and the availability of credit encourages them to pursue a degree. Many major companies offer such programs: General Electric Company (GE), Xerox, AT & T, Lockheed Missiles and Space, Holiday Inn, Transworld Airlines (TWA), Bank of America, International Business Machines (IBM), and John Hancock Mutual Life Insurance. Four of these offered their own degrees: IBM, Xerox, GE, and AT & T (McQuigg, 1980, p. 325). While employees do receive college credit from cooperating institutions, they must be embarked on a degree program at an institution as well in order to take advantage of the credit arrangement. The implication is that the courses have been assessed and proclaimed up to college standards; not that there has been cooperative planning and cosponsoring. The four companies that offered entire degrees could be considered to be operating in

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competition with institutions of higher education rather than in cooperation with those institutions.

In order to serve the combined interests of "colleges faced with declining enrollments through the 1980s, companies seeking to broaden the education of their workers, and employees who lack either money or time to pursue higher education on their own," a growing number of industries and community colleges are offering industry-site courses ("Earning," 1980, p. 76). Employees who graduate from these courses must go on to a local university in order to complete the baccalaureate degree. Of the bachelor and beyond degree granting programs on-site surveyed by Business Week, none reported granting credit for life experience. The universities rather chose to avoid jeopardizing their accreditation by ruling that industrial students must meet usual university standards (p. 76). Luxenberg (1980) found that Citicorp cosponsors associate degree programs with the College of Staten Island as part of its larger training operation (p. 316). Again, employees wishing to pursue a baccalaureate degree must travel to a university to complete it.

The National Association of Bank Women, Inc. (NABW) established an Education Foundation in 1973 which, among other activities, sponsors a bachelor's degree program in management. In cooperation with four degree granting institutions, NABW makes it possible for bank women to obtain a bachelor's degree in management in three to five years. The women participants are granted academic credit for on-the-job experience, prior learning, independent study, and completion of management institutes (Baker, 1980, p. 320). This program approaches an exemplary form until the absence of employer cooperation is noted.

Perhaps the most ambitious of all cooperative programs is the Servicemen's Opportunity College (SOC), an arrangement between the higher education community and the United States Department of Defense begun in 1973 (Rose, 1979, p. 5). The challenges presented to the administrators involved in this undertaking are onerous: the student population is geographically scattered and highly mobile and the responsibility for instructional delivery must be shared among institutions all over the United States. As might be anticipated, several specific weaknesses have been identified. The largest concern has been one of quality assurance; often adjunct faculty have been widely used to deliver the on-base courses without effective monitoring from either the educational institution or the military. In relation to quality programing, the lack of adequate planning for feasibility and to meet the military's needs was also identified. Both military and civilian student advisement has been offered, sometimes in isolation one from the other and occasionally at cross purposes (Nickerson, 1979).

The above review of existing baccalaureate programs for adult students, while demonstrating the validity of the concept, also produced evidence of serious flaws in delivery. Given this situation, the demand for such programs that has been indicated, and the promise of general systems theory for construction of a conceptual design, the study reported herein seemed justifiable as a contribution to the field of higher education administration.

Procedures

As was indicated previously, the purpose of this study was to develop a design for a business/postsecondary baccalaureate degree program utilizing constructs derived from general living systems theory that in turn formed the basis for specific propositions applicable and sufficient for a total cooperative program. A process of logical derivation was used to derive the constructs from the general living systems theory literature and from the constructs to form the specific propositions. The study was undertaken in four phases. The first phase was the development of constructs applicable to a complex organization. The constructs were derived from the major works in the general systems theory literature. James G. Miller (1978) and Kast and Rosenzweig (1979) provided the major sources. The second phase was to develop specific propositions applicable to a major cooperative educational program from the constructs of the first phase. The third phase was a conceptual application of the major propositions to a design for a cooperative educational program. Practices of existing cooperative and adult programs were used to support the design. It was anticipated that the design would have general applicability within the confines of the limitations defined. The fourth phase was the conceptual validation of the design by a panel on the basis of (a) its consistency with the propositions drawn from general systems theory as proposed by the study, (b) the necessity of the propositions to the overall design, and (c) a subjective evaluation of the sufficiency of the design for cooperative program implementation.

The general living systems theory constructs were drawn primarily from J. G. Miller (1978) whose writing provided the seminal work in the field. Consider an example construct as follows:

Boundaries serve to screen matter-energy as they are received into an organization.

J. G. Miller (1978) viewed boundaries as filtering mechanisms allowing some matter-energy to cross while disallowing the passage of other. Boundaries are not necessarily consistent in the filtering activity; the state of either the system or the environment can affect the rate at which matter-energy crosses the boundary (p. 56). Because organizations cannot deal with all possible inputs, the screening function of boundaries is vital (Kast & Rosenzweig, 1979, p. 133). According to Kast and Rosenzweig (1979) a further function of boundaries is often one of homogenizing the inputs to an organization so that it can better deal with those inputs (p. 133).

The constructs such as that outlined in the previous paragraph were the source of the specific propositions applicable to a major cooperative educational program. To follow through with the boundary construct, the following is an example of one specific proposition derived from the construct:

The requirements for student admission to an educational program must be defined and clearly stated.

This proposition is supported by the findings of the Carnegie Council on Higher Education in their report Selective Admissions in Higher Education (1977). The council recommended:

1. The governing board itself, with faculty, student, and administrative advice, should set general admissions policy, and should review admissions procedures and the results of admissions policies.
2. Statements of policies and procedures should be made available to the public (p. 16).

Because students constitute only one of the forms of matter-energy that passes into a cooperative program, further specific propositions regarding industry and postsecondary commitment were developed as they related to the construct.

The third step, the conceptual application, resulted in a design for a complex cooperative baccalaureate degree granting program. The intent of the design was that it should be sufficient to implement such a cooperative program.

The design included attention to the meaning of the degree, the target population, legal control and governance, financing, content, delivery methods, support services for students, appraisal of student progress, program structure, and administration. To use the boundary construct example once more, the derivation of the design included the following element: an advisory committee composed of representatives from business employers, the potential student group, government university administration, and university faculty shall advise the governing board on admissions policy among other matters. In order to achieve a consensus that is "educationally and socially sound" (Corson, 1975), a group that is representative of the various constituents of the enterprise should have a voice in who may gain access to the program (p. 115).

A 5-member validation panel was chosen for the conceptual validation. The choice was made on the basis of practical or academic expertise in the area of higher education administration, corporate human resource development, and cooperative program administrative/ development. A validation package was developed that included the specific propositions and the cooperative program design. As well, a validation instrument allowed the panel to judge on a 5-point scale both (a) internal consistency of the propositions to the design and (b) the necessity of the propositions to the design; as well, the instrument asked the panel members to subjectively evaluate the design in terms of sufficiency for implementation.

Once developed the validation instrument was field tested by a 3-member group. The group consisted of an instructor in a postsecondary technical institution, a senior government official responsible for sponsored job creation and training in business, and a private-sector consultant specializing in advising business in matters relating to manpower planning and training. Their suggestions regarding usability and ease of response were incorporated into the validation instrument.

The members of the validation panel were contacted individually by telephone to confirm their willingness to review the instrument. Once confirmation was obtained, each panel member was mailed a validation package that consisted of a covering letter containing general instructions, the validation instrument, and a stamped and addressed return envelope. A sample of the validation instrument and covering letter are contained in the Appendix.

The Remainder of the Study

The remainder of the study is composed of the following chapters: Two, Basic constructs derived from living systems theory; Three, Specific propositions applied to cooperative programs; Four, The design; Five, The conceptual validation; and Six, Summary and conclusions.

CHAPTER II

BASIC CONSTRUCTS DERIVED FROM LIVING SYSTEMS THEORY

A major strength of general systems theory is that it encourages a mode of thought, rather than providing a highly structured model (Immegart & Pilecki, 1973, p. 5). By the very nature of systems theory it is impossible to focus on any one component or subsystem; rather, the total system and the interrelationship of the components must be examined (J. G. Miller & J. L. Miller, 1981, p. 55). In addition to providing a method of examining the parts and the whole, general systems theory includes a consideration of the environment in which the system operates (Immegart & Pilecki, 1973, p. 5).

J. G. Miller and J. L. Miller (1981) further defined general living systems theory as being concerned with a very special subset of all systems. They identified a hierarchical nature of living systems ranging through cells, organs, organisms, groups, organizations, societies, and supranational systems all of which share characteristics common to living things (p. 46).

As the concepts of living systems theory were refined by a number of theoreticians, the terminology became part of the language and understanding of organizations. The ideas inherent in the characteristics are interrelated and, like the theory of general living systems, can be considered separately but also need to be considered as they relate to one another. The essential characteristics and a brief description of each are presented as follows:

"Feedback" is the process by which a system imports information from the environment (Kast & Rosenzweig, 1979, p. 102). Without feedback, systems cannot make the necessary adjustments to changes in the environment and thus would find it difficult to survive (Owens, 1981, p. 82). While feedback can be both positive and negative, negative feedback is the most important to a system as it contains information that the system is drifting from the course dictated by environmental considerations (Kast & Rosenzweig, 1979, p. 102).

"Steady state or dynamic equilibrium" is a process of continual exchange of energy with the environment that allows a system to remain in balance. As well, the various subsystems within the system must maintain a balance among themselves in order for the system to perform effectively (Kast & Rosenzweig, 1979, p. 102; Katz & Kahn, 1978, p. 23).

A system "boundary" provides the clear demarcation that identifies it within its environment (Kast & Rosenzweig, 1979, p. 128). Further, living systems' boundaries are permeable, allowing necessary interactions with the environment.

"Homeostasis" is a concept that refers to the activities within a system, such as communication procedures and decision making processes, that allow a system to "regulate itself and stay in balance" (Owens, 1981, p. 82).

One of the basic concepts of living systems theory, "entropy" refers to the condition of moving towards system disarray and eventual death that exists in the absence of sufficient interchange of energy with the environment (Katz & Kahn, 1978, p. 3).

"Negative entropy" is the process of importing energy, materials, and information from the environment in order to arrest the natural tendency towards disarray (Kast & Rosenzweig, 1979, p. 102).

"Equifinality" is the notion that "final results can be achieved with different initial conditions and in different ways" (Kast & Rosenzweig, 1979, p. 102).

As was indicated, general systems theory has been granted credibility as a way of thinking about organizations through varied use and application. In addition to the characteristics above, that are common to all living systems, organizations have been identified as having identifiable and interacting subsystems. Each subsystem carries out particular functions and assists in maintaining a condition of steady state within the organization. The subsystems may appear as an identifiable component or may be spread across several components of the organization (J. G. Miller, 1978, p. 52). Kast and Rosenzweig (1979, p. 109) identified the primary components (subsystems) of organizations as goals and values, and the technical, structural, psychosocial, and managerial subsystems.

The managerial subsystem contains three further subsystems: operating, coordinative, and strategic.

> The operating subsystem is the "technical core" where tasks central to the organization are performed. In the coordinative subsystem, the main activitiy is the integration of internal activities. The strategic subsystem develops long-range plans and relates the organization to its environment. (Kast & Rosenzweig, 1979, p. 113)

J. G. Miller and J. L. Miller (1981) identified 19 subsystem processes that are identifiable in all living systems and that are critical to the health of the system. The complexity of the processes and their location within subsystems are dependent upon the complexity of the system (p. 47).

The constructs that follow are based on the assumption that the characteristics, subsystems, and subsystem processes described above apply. Further, these six constructs have arranged within them all the vital components for developing an organization and contain all of the processes of the subsystems necessary to the successful operation of the system as a whole.

Construct One

An organization is created, often in a legal sense, from the blueprint provided by other similar organizations. The organization, in turn, produces its own blueprint.

J. G. Miller (1978) indicated that the template or charter "programs the system" (p. 608). Such a template has a number of purposes. It provides a statement of purposes and goals, the organization's name, the initial subsystems that will comprise it, a statement of fundamental decision rules, and some of the relationships it will have with other organizations in its suprasystem (p. 608).

Of all the purposes of the blueprint, the statement of organizational goals has received the most attention by other writers in the field of general living systems. The goals adopted by an organization were viewed as being imposed by its environment; further, in order to ensure its survival, an organization must continually pay attention to those stated goals (Kast & Rosenzweig, 1979, p. 157; Kimbrough & Nunnery, 1983, p. 300). As well, one of the methods for determining organizational performance is to evaluate its effectiveness (responsiveness) in goal-setting (Kast & Rosenzweig, 1979, p. 169). Katz and Kahn (1978) added that statements of goals, decision rules, and relationships with other organizations contribute to lessening variability in human behavior and contribute to producing stable patterns of activity (p. 38).

The template can be viewed as that which gives an organization structure. Structure, in turn, provides "order, system, and many ... distinctive characteristics" (Owens, 1981, p. 89).

Construct Two

Boundaries serve to hold together the various components that make up the organization, to protect the organization from environmental stresses, and to screen information and matter-energy as they are received into the system or pass out of the system. They also contain points of interface that assist in completing transactions with the environment.

The concept of boundary, central to an understanding of general living systems theory, provides the basis for considering the relative openness of the system to environmental exchanges (Katz & Kahn, 1978, p. 65). The degree of permeability of the boundary controls the amount of matter-energy and information that crosses the boundary. While a boundary may have concrete elements such as buildings or fences, in reality, the notion of boundary is an abstract concept (J. G. Miller, 1978, p. 609).

Organizational boundaries are best identified through selecting those functions that are centrally related to the operation of the system. Any behavior not related to those functions is, then, outside the system (Katz & Kahn, 1978, p. 21). Consideration of the point or points at which functions unique to the system are no longer identifiable may also assist in locating boundaries (Immegart & Pilecki, 1973, p. 35).

In addition to defining the organization, boundaries serve to filter information and matter-energy and hence to protect the system from the arduous task of having to deal with all possible inputs (Kast & Rosenzweig, 1979, p. 128). As well as filtering, boundaries homogenize inputs into a form suitable for the system's use (Kast & Rosenzweig, 1979, p. 128). The filtering and homogenizing functions of boundaries also apply to the process by which outsiders become members of the organization. The existence of any special requirements for membership and procedures for inducting members into the system are boundary functions (Kast & Kahn, 1978, p. 66; Katz & Rosenzweig, 1979, p. 128).

Boundaries also serve to filter organizational outputs to the environment. Not only is it inappropriate for the organization to send all possible outputs to the environment, the existence of the boundary filter helps to restrict the activities of the organization (Kast & Rosenzweig, 1979, p. 128).

While generally there is a lower interchange of information and matter-energy at boundaries than within the system, there are areas of each boundary at which there is a high interchange of energy, materials, people, money, and information (Kast & Rosenzweig, 1979, p. 129; Katz & Kahn, 1978, p. 66). These areas of high exchange are points of interface, that is, areas of contact between one system and another (Katz & Kahn, 1978, p. 66). The points of interface facilitate necessary transactions with the environment.

The concepts of boundary and interface have assisted organizational theorists in understanding that most individuals at any given time belong to more than one system. Katz and Kahn (1978) called this situation the concept of partial inclusion (p. 46). While the notion of partial inclusion is useful in considerations of indoctrination of all individuals into the system values and norms, it becomes especially relevant to possible problems associated with individuals who occupy both boundary positions and boundary-spanning positions. Such individuals may experience conflicting pressure from their own organizations and from the environment and thus, fragmented commitments (Katz & Kahn, 1978, p. 46). Special boundary conditions detailing clarity of demands and constraints, and other mechanisms to ensure allegiance must be continually used in order to assist individuals who occupy boundary positions to know the system of which they are a part (Katz & Kahn, 1978, p. 46).

Construct Three

An organization requires a subsystem whose task it is to bring human beings, other living matter-energy, and non-living matter-energy into the system.

J. G. Miller (1978) referred to a subsystem that brings matter-energy into a system as the "ingestor" (p. 611). In Miller's terms, the boundary and the ingestor "often have some or all components in common" (p. 611). Often, however, those components that process non-living matter-energy such as materials and supplies are different from those that process human beings. Further, Miller distinguished between two groups of humans who cross organizational boundaries. One group is composed of those who are destined to become members of the organization. A second group, termed "inclusions," are those people who cross into the organization for other purposes than membership and for varying periods of time (p. 162).

Construct Four

Organizations require a number of subsystems whose task it is to process matter-energy inputs that have entered the system and to transform them into suitable outputs to the environment.

J. G. Miller (1978) ascribed sufficient importance to subsystems that process and transform matter-energy that he identified eight distinctive subsystems that deal with this including the "distributor," "converter," "matter-energy storage," "motor," "supporter," "producer," "extruder," and "ingestor" (referred to in Construct Three) (pp. 611-623). For the purposes of this study, while the functions of each subsystem are considered, all but the ingestor are included in Construct Four.

There is some support for this grouping in the literature. Katz and Kahn (1978) classed this group as the supportive subsystems, one of two generic types of subsystems that carry out environmental transactions and negotiate relationships with other systems (p. 52). This group is essential to one of the basic concepts of living systems theory, that of steady state or dynamic equilibrium. It is through the work of these subsystems that maintain a continuous energic flow that a system remains in dynamic equilibrium (Kast & Rosenzweig, 1979, p. 102). In addition to being dependent on a flow of necessary supplies of energy, dynamic equilibrium is sometimes ensured through acquisition of extra matter-energy and its storage, tasks that are carried out by these subsystems in order to offset future shortages from the environment (Katz & Kahn, 1978, p. 23).

A characteristic of living systems is their ability to counteract tendencies toward entropy. Because no social organization is self-sufficient, a continuous inflow of energy is vital; without it systems are subject to the law of entropy or eventual death. The activities of energy input, throughput, and output are cyclical, providing energy in the environment for repeating the process within the system, thus delaying the entropic process. Openness, another concept basic to living systems, is related to the idea of energy movement in that a measure of system openness is its ability to move various forms of energy across boundaries (Immegart & Pilecki, 1973, p. 32; Katz & Kahn, 1978, p. 23; Kimbrough & Nunnery, 1983, p. 301).

Immegart and Pilecki (1973) reported that it is not sufficient that inputs, throughputs, and outputs exist. There is an interrelationship among the subsystems that process within the organization the transformation of the inputs to products or services (the outputs) to the environment. Further, the method of processing within the organization affects the results achieved (p. 39).

Construct Five

Organizations require subsystems whose task it is to seek out appropriate information in the environment, to disseminate information to other subsystems within the organization, and to send information about the organization to the environment.

It is important to distinguish between information and communication. Information is "composed of facts or data about events, situations, or conditions affecting the system" (Immegart & Pilecki, 1973, p. 54). Money is one of the kinds of information passed into a system (J. G. Miller, 1978, p. 523). Without communication, information is meaningless, because communication is the processing of information (Immegart & Pilecki, 1973, p. 54).

Information and its subsequent processing allows a system to act on threats to the system or imbalances within the system (Immegart &

Pilecki, 1973, p. 55). Without information and the meaning attributed to it, the input of human energy to an organization is meaningless and the work of the organization that is dependent upon communication between subsystems cannot occur (Katz & Kahn, 1978, p. 428). Further, in order for groups within the organizational environment to continue to value the work being done, they must continually receive meaningful information that allows them to provide further returns to the organization (Katz & Kahn, 1978, p. 428). So that the environment can provide meaningful information to the organization it first must have appropriate amounts of information about system activity; this too is the work of a communication subsystem (Immegart & Pilecki, 1973, p. 95). Katz and Kahn (1978) stressed the importance of a communication subsystem: "the exchange of information and meaning . . . is the very essence of a social system or an organization" (p. 428).

The concept of feedback is one that is central to living systems theory generally and information/communication subsystems specifically. Immegart and Pilecki (1973) defined feedback as "a particular kind of information and communication process" (p. 55). Because feedback is after the fact information and is evaluative in nature, it allows a system to modify its processes should that be necessary (Immegart & Pilecki, 1973, p. 55; Kimbrough & Nunnery, 1983, p. 303). When an organization desires feedback from its environment, a structure that is relevant to the system must be put in place in order to collect that which is functional for the system and to ensure an appropriate balance (Immegart & Pilecki, 1973, p. 61). The balance in feedback obtained involves the amounts of positive and negative feedback directed at the system. Positive feedback can have a positive effect; it can point out those parts of the system that should be reinforced because they are functioning well (Immegart & Pilecki, 1973, p. 57). On the other hand, if it reinforces the wrong system actions, positive feedback can result in the system failing to make necessary adaptations (Kimbrough & Nunnery, 1983, p. 303). Negative feedback, conversely, is vital to the system. It is what allows a system to learn where corrective action must be taken in order for it to adapt and change (Immegart & Pilecki, 1973, p. 57; Kast & Rosenzweig, 1979, p. 102; Kimbrough & Nunnery, 1983, p. 303). Through the acquisition of feedback and the subsequent accurate transmission of the feedback to the decision makers, organizations avoid disequilibrium and are able to maintain a steady state (Owens, 1981, p. 82). It is at the process of taking action as a result of feedback that the centrality of feedback to living systems theory becomes evident; adaptation to a changing environment allows a system to avoid the entropic process (Immegart & Pilecki, 1973, p. 43).

Construct Six

The group or person who performs the management function is an essential subsystem of any organization.

The management subsystem sets the chief purposes of the organization, establishes its primary goals, and controls the organization. J. G. Miller (1978), naming the management subsystem the decider component, outlined the tasks of management:

> Decider components adjust organizational inputs and outputs; allocate resources including money, artifacts, and human subsystem components; set standards for task performance; evaluate the performance of human and other components; determine and administer rewards and punishments; develop plans, solve problems related to all organizational processes; resolve intraorganizational conflicts; and direct the organization's relationships with other systems. (p.644)

One of five interacting subsystems identified by Kast and Rosenzweig, the managerial subsystem spans the entire organization and provides environmental linkages as well (Kimbrough & Nunnery, 1983, p. 300). The boundary spanning quality of management applies not only to its environmental boundaries but also to subsystem boundaries within the organization. Katz and Kahn (1978) reinforced Miller's definition of the tasks of management and added the concept of subsystem and environmental boundary-spanning as complex management functions (p. 91). They added to the above tasks the task of resolution of internal conflicts.

Katz and Kahn (1978) identified two types of managerial substructures that are necessary to organizations: regulatory mechanisms and authority structure (p. 55). Regulatory mechanisms gather information about energy transactions with the environment and provide feedback to the system about the functioning of those transactions (p. 55). Management information systems could be seen to fall within this description. The second type of managerial substructure is the authority structure that pertains to the sources of decision making and how the decisions are implemented (p. 57). Authority is legitimized, in this way of thinking, by legislation, and decisions made by the managerial subsystem can only be changed through legitimate channels (p. 57).

Kast and Rosenzweig (1979) further refined the managerial subsystem according to the levels of the organization at which they function. The operating subsystem, as they called it, is closest to the workings of the organization (p. 113). The main task at the operating level is to ensure that the prime organizational function is accomplished efficiently and effectively (p. 113). In order to do this, the operating subsystem attempts to protect the technical core from uncertainty and in doing so closely resembles a closed system (p. 111). The strategic level subsystem operates at organizational boundaries and cuts across all subsystem boundaries (p. 112). Its tasks are those described in preceding paragraphs and which most closely reinforce the open systems concept (p. 113). Coordinative management operates between the operating and strategic levels (p. 113). As its name implies, this level of management integrates the activities of the operating subsystem, translates the policies of the strategic level to operational terms, and provides a means of communication between the two levels (p. 113). This level is commonly referred to as "middle management."

CHAPTER III

SPECIFIC PROPOSITIONS APPLIED TO COOPERATIVE PROGRAMS

Chapter II consisted of a review of the relevant general living systems theory literature. The review was organized around those ideas deemed necessary for viewing a total organization and resulted in 6 basic constructs considered vital to all the components of a successful organization.

The 6 constructs provided the basis of the derivation of a number of specific propositions related to the development of a cooperative baccalaureate degree granting program involving postsecondary institutions and a business. Contained in the present chapter are the specific propositions that are related to the basic constructs and justification for the inclusion of each based on the literature of the field. Chapter III is divided into 6 parts corresponding to the basic constructs of the previous chapter.

Specific Propositions That Pertain to Construct One: An Organizational Blueprint

Specific Proposition 1

A cooperative program must reflect the legal requirements of its member organizations.

Higher education, especially in the public sector, is affected by legislation that governs its conduct. In the United States, all 50 states have state agencies or multicampus systems that coordinate and control educational activities (Bowen, 1982, p. 5). The Canadian form of control is traditionally through provincial statute under which boards of governors are responsible for all policy matters for each institution and a senate is responsible for academic policy. Senate powers are usually specified by a charter (The International Encyclopedia of Higher Education, 1977, p. 787). In Alberta, further powers are vested in the lieutenant governor who may "for the purpose of maintaining a coordinated balance of learning in universities throughout Alberta . . . set out educational objectives and guidelines" (Government of the Province of Alberta, 1976, p. 2).

The board of trustees, whose function it is in American higher education to serve as a buffer between the outside world and the institution, plays an important role in at least one nontraditional degree program (Bowen, 1982, p. 89; Roosevelt, 1981, p. 8). The American College which offers a life underwriting diploma as well as degrees in finance and administration maintains a board of trustees composed of individuals who hold high positions in the industries for which American College trains personnel (Roosevelt, 1981, p. 8).

The business side of the partnership in a cooperative program requires less formal sanctions for any involvement it might have in educational endeavours. The decision to become involved in forms of corporate education is made by senior executives who view training and education as "necessary and legitimate business functions" (Lusterman, 1978, p. 39). Many corporate decision makers legitimize educational activity through the view that money spent on training is an investment rather than an expense (McQuigg, 1980, p. 324).

Specific Proposition 2

There must be a clear statement of the purposes and goals of a cooperative program.

Educational goals are generally characterized as ambiguous and abstract largely because the educational mission is complex and unclear. Also, because the interest groups who demand a voice in setting educational goals are diverse and often in conflict, goal setting becomes difficult. Thus, the more abstract the goal statement, the less likely there will be disagreement about those goals (Baldridge, Curtis, Ecker, & Riley, 1977, p. 3).

Doll (1980) hypothesized the demise of higher education in its present form, in part, because of the inability of educators to formulate goals whose end products would satisfy society. He viewed society and business as being one and attributed the increase in industry-based training to the lack of university responsiveness to its society (p. 334). A beginning for formulation of mutually satisfactory goals was presented by N. R. Smith (1980) who saw "business as that element of society which allows us to afford civilization and education as that element of society which civilizes us" (p. 312). In doing so, Smith laid the groundwork for his rationale for a clear liberal purpose to serve the needs of business, a theme which appears in much of the literature of cooperative programs.

N. R. Smith's (1980) purpose for education was to produce people with a good basic background in "our language, literature, history and culture--people who can conceptualize, reason, and solve problems--people with a sympathy for the human predicament" (p. 313). A product such as this fulfills the needs of industry/society in that a liberal arts background provides the necessary skills that allow people to learn job-related skills on site. Branscomb and Gilmore (1975) viewed a joint industry/higher education commitment to liberal arts education as necessary preparation for workers who increasingly must deal with rapidly changing technologies. Gavert (1983) reinforced the notion that industry must share the responsibility for the growth of liberal arts in order to avoid becoming a "nation of dull technocrats" (p. 25).

The above discussion reflects the goals of societal and institutional interest groups. As well, the goals of the student-worker participants must be considered. The following is reflective of the goals of adult learners in general.

> 1. acquiring knowledge and skills of practical value to them and society, for instance, meeting the requirements of the labor market or degree-awarding institutions;
> 2. acquiring and internalizing knowledge, values, and habits felt to be enriching for their personality and/or desired by society;
> 3. developing independence and capacity for critical study;
> 4. experiencing intellectual pleasure; and
> 5. being motivated for recurrent education. (Holmberg, 1977, p. 102)

In order to ensure the success of industry-based educational programs, Broskowski and Driscoll (1978) recommended that the goals of the participant learners be linked with those of the organization (p. 50).

Specific Proposition 3

The function of the cooperative program must be understood and acknowledged by the cooperating organizations.

The function of a business-based cooperative program appears to be that of a contributor to a larger set of desirable societal conditions.

As part of the total adult education movement, such a program would make a significant contribution to the establishment of the learning society that many educators advocate (Barasch, 1981, p. 42; Kurland, 1978, p. 386). Barasch (1981) viewed the growing trend towards what she termed worklife learning as one of the "most significant developments in postsecondary education in the last quarter of this century" (p. 42). This was reinforced by Wilson (1971) who saw cooperative education generally as a "powerful tool for achieving the goals of education" (p. 17). Off-campus and nontraditional programs provide new energy to postsecondary education that, in turn, encourages a re-examination of the overall goals of education (H. A. Miller, 1979, p. 509). Also, cooperative programs have traditionally been able to respond more quickly than established on-campus programs to important issues in higher education (Wilson, 1971, p. 17).

There is evidence that a large number of adults who missed postsecondary education would take advantage of an accessible program (H. A. Miller, 1979, p. 511). An industry-based program would increase accessibility for working people and would also contribute to the larger goal of equalizing educational opportunities (Kurland, 1978, p. 386).

From an industry point of view, a planned educational involvement is part of manpower planning (Kurland, 1978, p. 386). Also, a cooperative program encourages a greater understanding in both educational and corporate partners of the others' needs and goals and assures a financial saving by reduced duplication of effort ("Why Can't," 1982, p. 28).

Specific Proposition 4

Accreditation and quality control standards are necessary to provide the basis for the specifications of the educational program.

Through the controls imposed by quality assurance mechanisms and accreditation procedures the nature of any educational program is affected. This is doubly true of a cooperatively-sponsored program where the cooperating organizations each have standards that they may wish to impose on the program. The sponsoring industry may well support voluntary accreditation, for example, because the accreditation process provides validation for the curricula and promotes credibility for the program among the worker/students (Bua, 1983, p. 88). While legislated and accreditation standards cannot be ignored by program developers, it is also true that nontraditional programs pose difficulties for those who set standards that would normally apply to traditional programs (Lon Hefferlin, 1975, p. 148). Lon Hefferlin promoted the notion that developers of new programs should provide leadership to ensure that standards are set which are appropriate to both traditional and nontraditional programs (p. 172).

To date, accreditation and validation appear to be provided by either traditional accrediting agencies or, in some few instances, by one which is designed specifically for nontraditional programs. For example, the American College, which offers a range of nontraditional programs and degrees is accredited by the Middle States Association of Colleges and Schools (Roosevelt, 1981, p. 9). On the other hand, Canada has an accrediting body specifically for on-campus cooperative programs that clearly defines a cooperative program and specifies criteria for membership (McCallum, 1983). Bua (1983) described the accreditation service provided by the Program for Noncollegiate

Sponsored Institutions, sponsored by the University of the State of New York, whose purpose it is to review nonpostsecondary sponsored courses and make credit recommendations (p. 86). It is noteworthy that none of the above agencies appear to fulfill the universal criteria recommended by Lon Hefferlin.

It is not only necessary to ensure quality for the purposes of attracting students. In order to maintain the credibility of the program, graduates must be able to gain admission to graduate schools (Lon Hefferlin, 1975, p. 172). This responsibility for maintaining overall quality is a joint one; both the employer organization and the educational community must utilize the cumulative strength that exists in the resources available from legislation and planning and accrediting agencies to promote quality standards (Nickerson, 1979, p. 10).

Specific Proposition 5

Early in the planning of a cooperative program, the various interest groups must agree on a clear definition of the meaning of the degree to be offered.

The caution to define the meaning of the degree is not one to be taken lightly because it is this that determines curriculum content, admission and graduation requirements, and to a large extent, the skills of the graduate.

The nontraditional degree often has characteristics that make it appear different than traditional degrees. Indeeed, Houle (1973) cautioned developers of a nontraditional program to consider which one of four meanings a degree would have:

1. the accomplishment of four years of residential study, nine months a year, beyond secondary school;

> 2. the mastery of a body of knowledge of a serious and intricate sort;
>
> 3. the recipient has become a different sort of person--as defined by tradition or by the faculty of the institution; or
>
> 4. the completion of a process of acculturation. (p. 127)

The final decision will determine what the degree will "look like." Of course, in order to establish the philosophical base for an external degree, a target population must be defined. Holmberg (1977) viewed the major characteristics of a target population as the starting point, the "performance called for in the course objectives constitute the finishing point, and the process of turning the incoming student into the skilled graduate constitutes the course itself" (p. 27). In addition to the necessity for careful definition of the degree, Houle (1973) cautioned initiators to look outward as well. As well as an awareness of a demand, the proposed degree must have the support of the initiating institution and appropriate sectors of the community must be provided with a thorough understanding of the nature of the proposed program (p. 47).

The Canadian Association for Cooperative Education has clearly defined a cooperative degree for its member organizations by including that definition in its organization by-laws as follows:

> Cooperative Education is defined as a process of education which formally integrates the student's academic study with work experience in cooperating employer organizations. The usual plan is for the student to alternate periods of experience in appropriate fields of business, industry, government, social services and the professions. (McCallum, 1983, p. 6)

By doing so, a prescription for student activity is established prior to involvement of any of the potential interest groups.

Contained in the literature are indications that considerable thinking about business wishes regarding educational philosophy has been occurring. Broderick (1982) reported that General Motors Corporation not only requires upgraded technical skills, but desires that its employees experience attitudes and values that come from a liberal education program (p. 23). Doll (1980) reiterated that industry wants "broadly educated people" (p. 335). The results of a survey undertaken and reported by Peterfreund (1976) showed that senior people in major companies have refined their notions of education within business to the extent that they distinguish among training ("technical or manual skill development"), education ("the development of the mind, the transmission of knowledge, the ability to reason"), and development ("developing character, interpersonal skills, self-awareness, and other dimensions of personal growth and behavior") (p. 31). Thinking such as this would appear to indicate that corporate sponsors would be active contributors to discussions regarding the meaning of the degree.

Specific Propositions That Pertain to Construct Two: Boundaries and Interface

Specific Proposition 6

Admission standards for business-based educational programs must be clearly defined and established consistent with the special needs of the target population considered.

The literature of adult education programs contains differing philosophies about entrance requirements for students entering such programs. For example, Nickerson (1979), in establishing quality guidelines for off-campus military programs, recommended that admission and performance standards should be "demonstrably congruent with home campus programs" (p. 10). Similarly, Garland (1972) found that admission requirements of cooperative programs differed little from traditional programs in other institutions (p. 247).

The view of those who have discussed admission requirements for adult students is markedly different, however. The Canadian Skill Development Leave Task Force found that formal entrance requirements to an education system need to be dropped in order that the educationally disadvantaged not be discouraged from entering further training (Employment & Immigration Canada, 1983, p. 30). Garland (1972) recommended that special students entering cooperative programs could well be placed on the basis of placement and college entrance test results rather than on their possession of formal entrance standards (p. 255). For those students whose education has not provided adequate preparation for college courses, opportunity for remedial work may well be required of a college which admits such students (McKinney, 1972, p. 280).

Bertelson et al. (1977) acknowledged that even high school completion may be insufficient for college entrance for many blue collar workers in North America where large numbers of the population gain a high school diploma as a matter of course. An alternative posed was an open admission policy wherein success in first year courses provided the only entrance to second year. A further recommendation of this group was that adult workers should be provided with the developmental courses which would enhance their learning skills in reading, writing, and other college necessities (p. 6).

Britain's Open University has waived formal entrance requirements because it is primarily in the business of adult education and the view is that the university exists for those who would otherwise be excluded from higher education (McIntosh, Calder, & Swift, 1977, p. 8). McIntosh et al. (1977) reported implications of this practice which are both positive and negative; such a university has a well mixed student body but that mixture can well give rise to difficulty in teaching such a diverse group (p. 7).

Specific Proposition 7

Criteria for grading and graduation must be consistent with the needs of the adult student.

Assessment of student progress is closely linked with general recognition of the worth of a degree. It is not surprising that there has been some considerable discussion about evaluation of students. Although some institutions continue to rely on traditional grading systems, others have turned to evaluation methods which are as innovative as some of the instruction.

The Open University has not relied on external examinations as have the more traditional British universities. In an effort to consider the student who works largely in isolation, the Open University has provided a continuous feedback system throughout the term (McIntosh et al., 1977, p. 22). The Minnesota Metropolitan State College (MMSC) has required its students to enter into a degree contract which is a total educational plan. When the student feels he or she is at completion, evidence of achievement is presented to a Final Assessment Committee. MMSC has viewed the function of assessment as "not to fail students, but to make sure they have the skills and knowledge, the values and attitudes, and the understanding--in short, the competencies--which are appropriate to their educational career, and life goals" (Houle, 1973, p. 104).

In Australia, the University of New England has ensured consistency in evaluation by having internal students' work act as a control for external students, having internal faculty "double-grade part-time faculty's" students, and having the college review all final grades before submission (Potter, 1981, p. 716). Perhaps Bertelson et al. (1977) and the evaluation team for US/WC provided the best summation of evaluation of nontraditional students.

> Particularly in adult education, grading should be accompanied by more explicit and differentiated feedback to the learner who often finds it extremely difficult to assess himself . . . if necessary, staff members could be better trained to discharge this function in a manner that is as constructive as possible. When this is well done, a particular grade would rarely come as a surprise to the learner, and he would know how to interpret it. (p. 12)

In addition to assessment of individual courses, requirements for completion of a nontraditional degree vary from one program to another. Consideration of what constitutes sufficient work for graduation is important to the student, and in the case of a cooperative program, to the employee as well. Not only does completion of a degree signify that an individual demonstrated an ability to stay with a project, but the degree itself may be necessary for doing a particular job (Stoyanoff, 1982, p. 2).

Unlike practice elsewhere, in the United States, residency of some sort has been the norm. In fact, the United States Office of Education (now the Department of Education) has published a warning that reputable institutions do not issue degrees on the basis of correspondence study alone (Lon Hefferlin, 1975, p. 50). Residency requirements that demand a period of full-time study on campus in order for a student to graduate have proved a major obstacle to working adults who are not able to attend full-time. International exceptions to the traditional residency degree are Britain's Open University and

Canada's Athabasca University both of which have developed degree programs specifically intended for distance education.

Universities vary in the extent to which students may be granted credit for alternate learning experiences. Ruyle and Geiselman (1975) studied the characteristics of nontraditional programs in the United States and reported the following regarding opportunities to earn credit for nonclassroom learning: few institutions grant credit for past work experience such as Peace Corps or volunteer work; some institutions grant credit for courses taken elsewhere, but only after an examination; over half the institutions surveyed granted credit for activities such as cooperative work experience, volunteer work, completed works of art, or travel; two-thirds of the institutions reported granting limited credit for scoring acceptably on an examination without having formally taken the course work (pp. 60-63).

There is an indication of leadership in several institutions that may well overcome the cautious stance taken by the majority of schools regarding credit for other experiences of the majority of schools. Categorizing them "learning assessment crediting agencies," H. A. Miller (1979) identified the College-Level Examination Program (CLEP), New York Regents' University previous learning evaluations, the learning assessment unit of the University of Wisconsin system, Minnesota's Metropolitan State University, as examples of "the position that if you have learned something, you can get credit for it as long as it's appropriate to the program" (p. 514). Roosevelt (1981) described a very liberal requirement for degree completion through the American College where students are not required to attend classes that are offered nor do they have to use the college's recommended study guides. Here, the only requirement for each course was "successful completion of the final college exam" (p. 9).

The above discussion demonstrates that there is little agreement among the international university community regarding either whether grading and graduation requirements should be tailored for adult students or what those special requirements should be, should they exist. By inference, a reader must assume that adults, in most cases, must conform to the criteria established for traditional, residential programs. The attempts at special requirements designed for adult students can, at best, provide a beginning for the thinking regarding grading and graduation criteria for a nontraditional program.

Specific Proposition 8

The success of a cooperative educational program will be enhanced if the location of the classes is at the business site.

The provision of educational opportunities at the workplace not only is an advantage to workers but can contribute to increased worker productivity by demonstrating employer concern for staff (Fricano, 1973, p. 1). A further advantage to both individual and employer is that classroom study can be planned taking into consideration on-the-job experience, thus providing an immediate integration of theory and practice (Lusterman, 1978, p. 9).

The United States Armed Forces and the University of Maryland have been committed to the concept of on-site education to the extent that certificate and degree-related courses have been offered at military installations all over the world and within a time frame that is built around military activities (Massey, 1979, p. 11). Carp, Peterson, and Roelfs (1974) found that a significant number of adult learners surveyed (16% of men and 10% of women) used and preferred employer location for educational purposes, indicating that sufficient numbers of adults would participate to justify the establishment of industry-site programs (p. 34).

The literature contained examples of on-site programs of varying scope. Pace University in cooperation with Ebasco Services Incorporated designed a Business Certificate Program as part of a total degree program whose major strength was that employees meet at the work site and use work experience to explore business issues (Bua, 1983, p. 87). Luxenberg (1980) described a Citicorps program that offered both an associate degree in business and a Master in Business Administration on bank premises so that employees could take courses either after work or during lunch hours (p. 316). Business Week devoted an article to in-plant programs that were described as new "curb-service" undergraduate programs whose corporate participants number fewer than 5% of companies with 500 or more employees ("Earning," 1980, p. 76).

Specific Proposition 9

To ensure the effective implementation of a cooperative educational program, a structure must be in place that connects the educational system and the corporate system.

There have been attempts at building linkages between business and higher education but "joint efforts between these sectors are generally fragmented, duplicative, uncoordinated, and often undertaken on an ad hoc basis" (Clark & Rinehart, 1982, p. 1). The linkages that have come about have done so as a result of a growing realization that the gap between the requirements of the world of work and the products of higher education needs to be reduced. Through the acknowledgement by both parties that the university and business have common objectives, albeit using different means to achieve these objectives, has arisen some tentative attempts at liaison (McQuigg, 1980, p. 325).

Clearly, cooperative efforts do not happen easily. Clark and Rinehart (1982), among others, provided an overview of the subtle and complex barriers to establishing linkages between business and education.

Budget and cost factors. Failure to provide for adequate costing can constitute significant contention between the partners. Accurate accounting must be established to determine both direct and indirect costs. Further, attention must be given to the budget cycles of cooperating organizations; business cycles are often quarterly and out of phase with yearly budget cycles of educational institutions. Adequate planning in advance for accounting and auditing rules can overcome these problems (p. 5).

Business and institutional policies. As an organization grows, its policies and procedures become more complex and more rigid, thus forming a potential barrier to cooperation with other organizations. When two large organizations attempt linkages, policies involving hiring, sharing information, and contracts, for example, may have become rigid to the point that cooperative efforts are impeded (p. 5).

Legal restrictions. Minimum wage laws, civil rights legislation, liability, and workers' compensation are examples of legislative acts and judicial interpretations that can provide a barrier to linkages. Planners need to be aware of possible legal problems that could prevent joint activities and also understand that those legalities are not as rigid as they may first appear (p. 6).

Semantic barriers. Semantics develop differently in different organizations. Within those organizations as well are individuals who ascribe a personal meaning to concepts and terms. Only with continuous dialogue and the establishment of structures for feedback and communication can this potential barrier be overcome (p. 6).

Interpersonal factors. Personality conflicts, motivation, status, and hidden agendas interfere with linkage processes. Planners of joint programs can assist in facilitating cooperation by being aware of group theory and dynamics and leadership issues (p. 6).

Long range planning considerations. Coordinated long-range planning is necessary to avoid problems of timing and sequencing both of which can constitute impediments to joint efforts. Developing an expertise in forecasting and a "sophistication in futurism" are part of successful joint long-range planning activities (p. 6).

Hidden but real barriers. Of all the barriers to linkage establishment, impediments such as personal loyalty conflicts, individual stereotyping, and misplaced ownership or responsibilities are perhaps the most difficult to overcome (p. 6). N. R. Smith (1980) addressed this difficulty directly when he described the historical prejudice and lack of trust that has existed between the university and the corporate community, exacerbating the barriers to cooperation (p. 313).

Awareness of the potential for these subtle barriers to linkages and a willingness to bypass the individuals who stand in the way are possible solutions that planners of cooperative programs should understand (Clark & Rinehart, 1982, p. 6). In spite of these barriers, it is possible to establish cooperative programs. The necessary elements for success are "hard work, careful attention to details, a sophisticated understanding of the two worlds--education and industry--and contagious enthusiasm" (Clark & Rinehart, 1982, p. 5).

Specific Proposition 10

A cooperative program design must include allowances for possible divided loyalties of faculty and students.

At best, professionals have divided loyalties. Those loyalties to a larger professional group can interfere with allegiances to the employing organization. In a university setting, this is compounded by faculty membership in an academic discipline, further fragmenting allegiances (Riley & Baldridge, 1977, p. 5). An off-campus program provides even more potential for absence of faculty identification with one organization. Should there be a possibility of faculty reassignment back to the academic institution because of low off-campus enrollment, commitment to the special program is further endangered (Bertelson et al., 1977, p. 14). Bertelson and the evaluation team (1977) of the Wayne State US/WC program recommended maintaining program faculty despite possible program enrollment drops and also hiring faculty who are adult educators rather than discipline-oriented academicians in order to overcome this divisiveness (p. 14). However, they also recommended that faculty in special programs do some exchange teaching in an institution so that they do not become totally isolated from their disciplines (p. 21).

Students who are also workers cope with conflicts as well. Perhaps not all working adult learners involve themselves in educational opportunities in spite of the "unthinkable odds" reported by the Canadian Report of the Skill Development Task Force (1983); however, a formidable range of potential barriers to adult learners were presented (p. 31). In addition to the educational barriers, working adults must deal with employer expectations of their training and education that may or may not coincide with their own motivations (Lusterman, 1978, p. 8).

Specific Propositions That Pertain to Construct Three: Import of Matter-Energy into the System

Specific Proposition 11

To ensure sufficient and appropriate students for the program, active recruitment must occur within the cooperating corporation.

Because educational institutions are "people-processing" organizations, clients must be fed into the institution from the environment, acted upon by the institution, and returned to the environment (Riley & Baldridge, 1977, p. 4). In a cooperative university/business program the client group is readily identifiable and the environment from which it is drawn is definable. Branscomb and Gilmore (1975) identified workers in those industries where the rate of obsolescence and specialization is high, as well as workers in rapidly growing service industries as probable clients for such a program (p. 228). Further, they demonstrated that affected industries would support continuing education for their workers because of the shortage of new graduates caused by demographic shifts (p. 225).

While the convenience of on-site courses can be expected to draw many students, an even more attractive element lies in the opportunity to have classes with known and compatible fellow-workers ("Earning," 1980, p. 77). Bertelson et al., in their evaluation of the Wayne State US/WC program, recognized the danger in an institutional dependency on a sole source of recruitment such as one corporation, but strongly recommended that the student group in a cooperative program should be homogeneous (1977, p. 5). They recommended homogeneity for two reasons: it is possible to maintain clear program aims and objectives, and service to the target group of students can be ensured through "positive discrimination" (p. 5).

Organizers and recruiters involved with a business-based cooperative program need to be aware that adults experience significant barriers to undertaking educational programs. Pasciullo (undated) identified a number of such barriers that exist even when tuition aid programs are present:

1. lack of company encouragement,
2. lack of time and money,
3. lack of confidence and personal ability to cope with learning situations,
4. lack of adequate information about programs and procedures, inconvenient scheduling and class sites,
5. distance from campus and/or learning centers, and
6. few college level programs designed to serve the educational needs, interests, and general characteristics of the working adults in labor unions (pp. 3-4).

Barasch (1981) reported that among union workers, enrollments in educational programs increased when "workers were informed about eligibility, a survey of their needs was made, and specifically designed courses were offered at convenient sites" (p. 45).

Employers committed to the idea of employee education can support the recruitment process, as well. By choosing to support workers in a further education endeavor a company promotes the image of a caring employer. The caring is very real if it comes in the form of finance and temporal assistance (N. R. Smith, 1980, p. 313). As well, employer support for courses that have college credit, even though the prime industry purpose is upgrading of skills, is a powerful motivator for prospective students (McQuigg, 1980, p. 325).

Specific Proposition 12

To ensure that the special needs of adult student/workers are met, a dual student advisement program is necessary.

Because of the very real barriers to education that adults experience, an advisement function is a necessary adjunct to recruitment. Schaier (undated) recommended a union could provide the advisement function to members embarking on educational endeavors. Knowledgeable peers were preferred to traditional college advisors who often do not understand the special problems of adult workers and may not be credible sources for prospective worker/students (p. 14). Kurland (1978), supporting a rational strategy for lifelong learning, reinforced the need for specialized adult counselors: not only should such counselors be qualified in an adult speciality, the counseling must take place in situations where adults are comfortable. Labor union centers and work places were two of the settings Kurland proposed (p. 389).

Massey (1979) described the comprehensive advisement and support services of the University of Maryland program for the armed forces. Overseas divisions had their own advisement capability, jointly supervised by the base education services officer and a University of Maryland area director. In the United States, advisement was carried out by civil service counselors and University of Maryland academic advisors (p. 12). Nickerson (1979) recommended the dual system of advisement in military educational programs to ensure quality. A military educational advisor can help in planning career advancement through education while a civilian advisor, knowledgeable about educational opportunities, can assist with planning around military tours of duty and focus on the students' personal and longer career goals (p. 10).

The general acceptance that employee training and education is an inherent part of manpower planning in business supports the idea of a dual advisement system in a cooperative program. Lusterman (1978) recommended that training programs integrated with performance appraisals and human resource planning would best meet industry needs (p. 39). Yet the students require access to assistance with educational and long-term career planning expertise as well.

Specific Proposition 13

Quality instruction that is appropriate to adult learners is essential.

The literature contained three distinct philosophical approaches to the qualifications that instructors in adult programs should have in order to be effective. The differences in philosophies appeared to lie in differences in attitude towards education in general.

Dean (1980) described the IBM experience where staff education occurs in response to rapid changes in high technology. IBM instructors were drawn from their original field, systems, or marketing responsibilities as content experts to become part of a short lived instructional team. None of these instructors were originally hired as an instructor (p. 317). Thus the conditions of IBM more closely approximated training than education, and the purposes of the instruction appeared to be for short-term gain.

American College, which has offered a mix of life underwriting certification and Master of Science in Financial Matters, has used a full-time faculty with a variety of qualifications: MBA, Ph.D., and J.D. (Roosevelt, 1981, p. 9). This college was described as a blend of traditional and nontraditional approaches with a goal of "education for performance" (p. 27).

The university-based cooperative program is perhaps more widespread and accepted than the business-based program. Barber (1971) described Canadian cooperative program faculty as usual faculty with unusual opportunities. While they were hired and had duties similar to traditional program faculty, they were also encouraged to work in industry, business, government establishments, or another university during the term in which they were not teaching (p. 96).

As has been noted, the University of Maryland's University College has delivered off-campus, postsecondary programs to United States service members in the United States and abroad. In order to maintain quality of instruction, the Univerity College contracts with diverse educational services, annually, as required. For this reason, tenure has not been granted to faculty, thus precluding research and publication as criteria for reappointment. Rather, instructors have been carefully recruited and screened, each course has been subject to student evaluation, classes have been visited by staff and other faculty, and instructors have been offered a range of faculty development programs (Massey, 1979, p. 12).

In an examination of the necessary elements for adult education as a field of study, an Alberta Advanced Education and Manpower publication (1977) identified three clusters of competencies necessary in the adult educator:

> 1. a conviction of the potentiality for growth of adults and a strong personal commitment to adult education exemplified by the extension of his own education;
>
> 2. the possession of certain skills . . . of writing and speaking certainly . . . but also the capacity to head groups effectively, to direct complex administrative activity, and to exercise flair in the development of programs; and
>
> 3. an understanding of the conditions under which adults learn, their motivations to learning, the nature of the community and its structure. Underlying all of these is an understanding of oneself undergirded by a sustaining personal philosophy. (pp. 62-63)

In addition to having competency in adult education, Bertelson et al. (1977) strongly advised that faculty for off-campus programs be recruited from among those who view themselves in a particular discipline (p. 15). For a nontraditional baccalaureate program for blue-collar workers they recommend the following recruitment criteria:

> a) a commitment to education for the underprivileged;
> b) a willingness to see their career prospects in this area of work;
> c) a capability of establishing good rapport with differing groups of working adults;
> d) an interest in the research and experimentation aspects of the program;
> e) an ability to translate knowledge normally available only in academic language into forms suitable for study by mature adult aged students who do not have recent study experience; and
> f) confidence in their own worth as scholars and the ability to develop this confidence in working adults. (p. 13)

Specific Proposition 14

Since a business-based baccalaureate program does not lend itself to the traditional rewards for faculty of tenure and promotion for research and publication, other equitable reward mechanisms must exist.

Much of the literature in the field of cooperative programs fails to deal with the special problems surrounding faculty rewards in a cooperative program. Massey (1979) and Roosevelt (1981) described major cooperative programs wherein faculty were not given the opportunity to gain tenure. In both of the aforementioned programs, research and publication were not possible; faculty members were judged on the quality of instruction alone. However, in these cases, a benefit to faculty of working on an industry site was that they gained practical exposure to their area of speciality and perhaps even to additional areas of speciality (Branscomb & Gilmore, 1975, p. 228).

Bertelson et al. (1977), in their evaluation of the Wayne State US/WC Program identified a staff morale problem that appeared to stem from a perception that the program lacked the rigor of home campus programs. From this morale issue, Bertelson et al. derived a number of recommendations that directly and indirectly address faculty rewards:

1. The home university should recognize that teaching and research in a blue-collar based program is more difficult than traditional University teaching.
2. Faculty should be assessed on criteria that are relevant to the program rather than on criteria ascribed to usual university teaching.
3. An individual who possesses a Ph.D. may or may not be suitable for a program of instruction for adults, especially if that person holds traditional expectations of rewards for research and publication.
4. The highest authorities of the home university should express a clear commitment to the cooperative program and an equally clear indication that its faculty has parity with campus faculty.

5. Further, faculty should be chosen from among those who view themselves as adult educators who are developing a career in that area (pp. 14-15).

Specific Proposition 15

To ensure business commitment in a cooperative baccalaureate program the advantages to business must be clearly defined.

The Skill Development Leave Task Force in Canada, after a year long investigation of the topic, concluded that business has recognized and accepted responsibility for short-term internal skill training (Employment & Immigration Canada, 1983, p. 81). However, the Task Force recommended that in the long term

> expansion of the economy, international competition, new product research and development, and the rapid rate of technological changes, will require that industry has a work force that is skilled, experienced, innovative, and adaptable. Skill development will have to change from "know how" to "know why" and creative learning will be a necessity not a luxury. (p. 82)

The notion of the advantages to business of sponsoring employee education appears throughout the literature of continuing education and human resource development. Education and training were viewed as a means of ensuring that skilled and productive manpower is available and also as a facilitation of human resource planning (Lusterman, 1978, pp. 8, 39). Not only does active industry involvement ensure a pool of skilled manpower, that involvement contributes to the development of curricula that meet industry needs (Branscomb & Gilmore, 1975, p. 232).

There are a number of economic advantages which accrue to business when it becomes involved in internal training and education. N. R. Smith (1980) reported that there is abundant evidence that industrial sponsorship of training increases productivity and reduces turnover (p. 313). The notion of industrial inability to reward workers with money during slow growth periods thus contributing to a dehumanizing of the work-place, reduced productivity, and increased turnover is central to N. R. Smith's (1980) argument that company support for training is an alternate reward (p. 313). In addition, when there are concomitant conditions of a "contracting labor market and an increasing demand for new skills, . . . expansion of adult and continuing education gives maximum economic benefits" (Bertelson et al., 1977, p. 6). An added advantage in participating in a cooperative program is that the industry receives a ready-made education staff from the university (Branscomb & Gilmore, 1975, p. 228).

Business Week reported the emergence of college and university degree programs in industry. The findings of one sponsoring company provided a summation of possible advantages: "the education program has increased employee loyalty, reduced turnover, improved productivity and the quality of supervision, and enhanced the company's recruitment efforts" ("Earning," 1980, p.77).

Specific Propositions That Relate to Construct Four: Processing Inputs of Matter-Energy and Transforming Them to Outputs to the Environment

Specific Proposition 16

There must be a clearly identifiable person or unit whose task it is to conduct environmental transactions.

A cooperative program is complex, minimally involving a close interrelationship of three systems: the educational institution, the business, and the program itself. The successful cooperative program will have a person or unit responsible for maintaining program liaison with the two most important components of the program's environment--the educational institution and the corporation.

There is some precedent for the educational institution providing this function. Flynn (1982) described the Comprehensive Employment and Training Act (CETA) experience in which a college "functioned broadly as a hub for multiple administrative and client support tasks" (p. 2). However, it can be inferred from other sources that the many environmental pressures on an educational institution may serve to complicate this task and prevent its being performed effectively.

Dash and Riley (1977) described the conflicts that result within an institution because of external pressures and differing internal goals. Accreditation agencies, government, and coordinating boards thus could impinge on the educational institution's capability to provide a coordinative role (p. 150). As well, external interest groups who often hold conflicting values exert pressures on educational institutions (Baldridge et al., 1977, p. 6). Should an institution be identified as taking a program off-campus, especially into what is perceived on another institution's territory, there is a danger that territorial resentments could result (H. A. Miller, 1979, p. 517). Placing the coordinative function outside the institution could well shift the focus sufficiently to help alleviate that possibility. Finally, Flynn (1982) presented a convincing argument against placing the environmental linkage role within the institution. In describing nearly impossible communication paths into colleges and universities she indicated that not only do these institutions not have top-down decision making processes that most organizations within the corporate sector have, there is rarely one identifiable individual who is the access point for quick decision making (p. 9).

Although the evidence was strongly against placing the responsibility for environmental transactions in the educational institution, there was equally strong indication that the function should exist. Again, using the CETA experience, Flynn (1982) reported the advantages of an identifiable linkage function as follows:

1. greater volume and mix of services available for individual clients;
2. improved access by clients to the service network;
3. reduction in the cost of information acquisition and exchange between agencies;
4. better administrative efficiency; and
5. more accurate, timely information for local planning (pp. 2-3).

The provision of educational services to United States military personnel has proved a complicated task which has allowed the opportunity to test a number of coordinative mechanisms between the military and educational institutions. One of the coordinative mechanisms is an educational services officer who exists on most military bases and whose job description supports the idea that the responsibility for environmental transactions should lie within the educational program itself. Massey (1979) described the experience of the University of Maryland's University College that provides educational programs to armed services men and women all over the world. In this program the education services officer on each base "acts as liaison between military commands and the educational institutions serving them" (p. 12). This practice encourages the existence of a linkage structure that meets the needs of the program and that is consistent with the structure of the institution so that the off-campus program does not become isolated (Nickerson, 1979, p. 9).

Specific Proposition 17

Provision must be made within a cooperative program for internal support and processing functions relative to library services, financial accounting, and student records.

There are a number of support services which are necessary to the successful functioning of a cooperative program and which, because of the off-campus nature of the program, must be carefully planned in advance. One such vital support to an educational program is a library service. Nickerson (1979) who discussed quality guidelines to military educational programs reported that a major criticism of military bases' programs was that some lacked sufficient library support. He placed the responsibility for provision of library service with the educational institution (p. 9). Conversely, the University of Maryland has arranged that military base libraries acquire recommended educational resources (Massey, 1979, p. 13).

H. A. Miller (1979) reinforced the need to plan library services in advance. Program developers must know whether access to a library is necessary; some instructional formats are such that they are not. If a library is necessary, then sufficient holdings to support the instruction and adequate student access to the holdings must be arranged (p. 513).

Accounting and other financial record keeping services are a necessary component of support services. Vogler and Manley (1982) cited off-campus program use of university computer capabilities as an example of nonfinancial agreements which could be reached between sponsoring organizations (p. 3). Flynn (1982) described a comprehensive agreement between the University of North Iowa and CETA which involved the university providing access to computerized accounting systems as well as data processing and computer programmers (p. 4).

Record keeping related to program students must also be provided. While arrangements may vary, clear delineation of responsibilities should occur during the program planning stage. Bua (1983) reported on the clarification of responsibilities which occurred between Pace University and Ebasco which resulted in the corporate training and development department of Ebasco assuming responsibility for student record keeping including name, department, grade and test marks, files on papers and reports, attendance, and social security number (p. 88).

Specific Proposition 18

The curriculum must reflect the interests of the sponsoring educational institution and the needs of both the sponsoring business and the potential students.

The curriculum of an educational program is, of necessity, the outcome of the philosophy underlying the meaning of the degree and is related to decisions regarding granting of credit and requirements for the degree. While it cannot be considered outside of the context of both its philosophical basis and the more mundane considerations, the curriculum is central to the entire program concept and, as such, warrants careful planning.

There has been extensive dialogue concerning university curricula since the beginnings of the university. However, while it is not the purpose of this discussion to report that historical dialogue, much of the literature of the 1970s and early 1980s involved the question of the relevance of existing curricula to the needs of a rapidly changing society. Traditional university programs have been criticized for focusing on the cognitive development of students, ignoring affective development, and disregarding the value of experiential learning (Vasconcellos & Callan, 1977, p. 164). The changing world caused one writer to recommend a curriculum which contained components of personal education designed to provide a cosmopolitan outlook and practical education in living and working skills, all with the underlying principle that this kind of knowledge is acquired over a lifetime (Bowen, 1982, p. 106).

The literature of cooperative and business programs reflects the diverse and sometimes conflicting interests of universities and industry and confirms N. R. Smith's (1980) distinction between what he termed "liberal education" and "useful education" (p. 312). In the same essay, Smith criticized liberal arts teachers for perpetuating the notion that knowledge is to be acquired for its own value and is not intended to be useful (p. 312). Corporate training programs, on the other hand, were begun as "education that produces results" (Luxenberg, 1980, p. 314) and "education for performance" (Roosevelt, 1981, p. 27).

The ideas of useful education and liberal education need not be mutually exclusive, however. Some developers of cooperative university/industry programs have demonstrated a concern that traditional liberal education should not be excluded from industry based programs. Branscomb and Gilmore (1975) indicated that a general concern about promoting the ability to deal with rapid change and the growing perception that industrial personnel require greater "intellectual vitality and flexibility" were causing industry to require staff with the qualities engendered by a liberal education (p. 222). Some corporate managers have indicated a need to recruit new staff who have a liberal arts background. In addition, several large companies such as IBM, General Electric Company, and General Mills Incorporated have gone so far as to send their top executives for short, specially-designed courses in liberal arts subjects including literature, art appreciation, history, economics, and philosophy ("Business Urged," 1984, p. 25).

Several established programs have incorporated the need for applied skills with a general education component. The cooperatively designed program offered by Pace University and Ebasco has consisted of courses in the business field as well as basic liberal arts courses (Bua, 1983, p. 87). The University of Maryland's University College program for servicemen has allowed the opportunity to develop a general education component within the degree; students have been allowed to plan a primary and secondary area of concentration (Massey, 1979, p. 11). Perhaps N. R. Smith's (1980) eloquent argument for the strong relationship between traditional and corporate education best supports the idea of the blending of liberal and applied education: "real human progress occurs when the minds of men and women are expanded and freed from the prejudices of the present, of the environment of the social and political milieu" (p. 313).

Specific Propositions That Pertain to Construct Five: Information Exchange

Specific Proposition 19

The interests of the parties that comprise the funding for a jointly-sponsored educational program must be carefully articulated during the planning stages.

It is possible that in the area of financial support for a cooperative program, more than at any other point of interface, the philosophical and practical differences of the interested parties will emerge. Generally, business considers training and education as an investment in human resources (McQuigg, 1980, p. 324; Schwaller, 1980, p. 322). The differences in business involvement in training and education, however, were ascribed by one study to differences in judgments about the value derived from such involvement and to differences in corporations' abilities to absorb the costs (Lusterman, 1978, p. 9). Universities, at the same time, have experienced reduced financial support and have little money for the development of new programs (H. A. Miller, 1979, p. 516). Bertelson et al. (1977) in the evaluation of the Wayne State University Studies and Weekend College Programme reported grave misunderstandings within the sponsoring university about costs of the off-campus program; some viewed it as a drain on university resources and others viewed it as contributing to the university general fund (p. 22).

Universities traditionally consider their usual method of instruction, large lecture halls full of day-time students, to be cheaper than any other method of delivering educational programs (H. A. Miller, 1979, p. 516). Public support to institutions thus goes to maintaining the infrastructure required to support the full-time day student (Wright, 1983, p. 46). Universities, already under strict budget controls, have discovered that off-campus programs must maintain costs comparable to traditional on-campus ones (H. A. Miller, 1979, p. 515). Those same strict budgets do not allow for investment in the developmental costs of new programs, yet it is not reasonable to expect the students in an innovative program to support additional costs through increased tuition (Bertelson et al., 1977, p. 22; H. A. Miller, 1979, p. 516).

Ruyle and Geiselman (1975) surveyed nontraditional programs to gain an overview of a number of issues, funding among them. They reported finding that these programs were usually expected to be self-supporting eventually, but did receive subsidization in the developmental stage. Of the more than one-half the programs that were reported as receiving a developmental subsidy, 48% received their subsidy from the educational institution, 27% from foundations and outside grants, and 25% from state and federal appropriations, industrial and employer support, and community contributions (p. 82).

Meeth (1975) recommended 12 possible alternatives for funding but preferred program budgeting as a solution to funding formula difficulties. He described several other innovative funding formulae, one of which involved value-added achievement formula based on new learning added for the students. His other suggestions included passing the costs directly to students, appealing to philanthropic sources, developing new baselines particularly suited to nontraditional programs, and completely changing formula guidelines.

H. A. Miller (1979) offered some practical suggestions, recognizing that there is no new money, but also acknowledging that off-campus programs are important enough to be supported. His recommendations included the following:

> 1. Reassigning faculty to off-campus programs especially where traditional classes are losing enrollment.
>
> 2. Developing non-credit or credit optional packages using instructional television with accompanying study guides.
>
> 3. Arranging cooperative programs with industries who will at least pay tuition costs or more for their employees enrolled in off-campus programs. (p. 516)

Since the 1960s, support has been growing for the idea that education is an investment that enhances the total quality of life and economic well-being of a nation. Alexander (1976) categorized those benefits as anything that

> a) increased production through income in the capacity of the labour force,
> b) increased efficiency by reducing unnecessary costs, thereby reserving resources for the enhancement of human productivity, . . . and
> c) increases the social consciousness of the community so that living conditions are enhanced. (p. 431)

The investment by the public (social costs) and by the individual students (private costs) can be justified through the rationale that education benefits the individual which, in turn, increases worker productivity and hence the general economy (Wright, 1983, p. 46).

Wright (1983) using formulae based on human capital theory, recommended association-sponsored education, that is, education programs organized by professional associations for members. He demonstrated that two years of full-term college education cost four times what a similar amount of association sponsored education would cost. Given that his premise included foregone income, taxes, and sales taxes, much of the same argument could apply to industry-sponsored education where the students continue to have the usual amount of disposable income.

The issue of financing nontraditional programs received consistent attention in the literature, the volume perhaps reflecting the controversial nature of the subject. The discussions did contain some positive suggestions. The Alberta Advanced Education and Manpower Consortium Fund Guidelines (1982) provided a useful model for financing off-campus and unusual programs. Based on program budgeting, this fund provided for annual grants to cover "lease costs, leasehold improvements, salaries for consortium staff, supplies and services, and related administrative costs" (p. 3). In addition, program funding was provided by the provincial government for program costs including "instructional salaries, travel and sustenance, and related supplies . . . and capital grants to purchase necessary instructional equipment . . . which funds will be turned over to the appropriate institutional account" (p. 3). Vogler and Manley (1982) in a discussion of federally-funded programs, recommended that universities with experience in contracts and grants would be the more likely to accept the need for program start-up expenditures (p. 6).

In considering a cooperative program that involves business, costs to business must also be acknowledged. Increased worker productivity notwithstanding, business bears the costs related to dedicated physical facilities, and to lost worker time (Branscomb & Gilmore, 1975, p. 230). However, the literature surrounding cooperative educational programs, and, indeed, training in general, produced little discussion of these costs. Peterfreund (1976) attributed this to the fact that business executives exempt training and educational planning from the usual cost-oriented decision making largely because they find it difficult to assess success or failure or to determine the value of education. Thus, the decision making is based on need, not cost (p. 34).

There appeared to be a general acceptance that students should bear some tuition costs. In one on-campus cooperative program, for example, students were paid for the work-time and charged 20 to 25% of their annual salary for tuition (Rodes, 1972, p. 82). The philosophy underlying this practice was that the students were free to be employed anywhere after graduation. The American College has charged tuition which covers 80% of college costs (Roosevelt, 1981, p. 9). A _Business Week_ report on in-plant degrees indicated that most companies require their employees to pay tuition costs and then reimburse them for 75 to 100% of those costs on successful course completion ("Earning," 1980, p. 77).

Specific Proposition 20

To ensure an appropriate balance of activity within the organization, a method of obtaining both internal and external feedback is necessary.

Information exists both inside and outside the organization which, if collected and provided to appropriate elements of the organization, could ensure its functioning and eventually its survival. Provision of this information allows decision makers to adapt "internal structures and processes" in response to a rapidly changing environment (Broskowski & Driscoll, 1978, p. 46).

Information from the environment for service organizations are usually found in research and development units (Broskowski & Driscoll, 1978, p. 53). Activities to monitor a rapidly changing environment are wide ranging and may include systematic needs assessments, sending staff to conferences, staff reading of professional journals and newsletters, and staff corresponding with colleagues (Broskowski & Driscoll, 1978, p. 54).

Internal information, in the form of evaluation and program monitoring, serves to ensure that the actions of the organization are congruent with the stated mission (Vogler & Manley, 1982, p. 6). The evaluation of client-servicing programs is admittedly difficult to achieve in the short-term, especially when goals are unclear and people cannot be evaluated in other than their entirety (Baldridge et al., 1977, p. 4). However, to assure the best possible program, some sort of quality control involving reporting, reviewing, and policing mechanisms is necessary (Nickerson, 1979, p. 10).

The evaluation team that examined the US/WC program recommended that a research component should be an essential part of new programs for working adults. The field of designing curricula, methods, and institutional structures for such specific adult groups is in its infancy, and as such, valuable information can be collected for use in present and future programs (Bertelson et al., 1977, p. 17).

Specific Proposition 21

Cooperative program membership in relevant organizations is an essential source of information.

Membership in certain organizations can constitute part of the process of maintaining a quality assurance component to a program. For example, the Program on Noncollegiate Sponsored Instruction conducted by the State of New York reviews education and training courses offered in industry in order to make recommendations to member uiversities about credit transfer for students (Bua, 1983, p. 86). One of the accreditation criteria of the Canadian Association for Cooperative

Education (CAFCE) is that at least one employee of the educational institution seeking accreditation must be a member of CAFCE (McCallum, 1983, p. 3). In the United States, all of the regional accrediting associations have developed and approved memoranda of agreement regarding "acceptable quality and performance" for off-campus degree programs (Nickerson, 1979, p. 7). That, and the mechanism provided by the Servicemen's Opportunity College encourages, according to Nickerson, attention to what is good practice and permits dialogue about deviations from acceptable standards.

Membership in organizations related to the program mission also provides a forum for the exchange of information. The objectives of CAFCE include several specific goals related to information exchange:

> 2. To strengthen the functioning of cooperative education through active interchange of ideas and experience among educators, employers, and students . . .
>
> 6. To encourage and coordinate fact finding surveys, studies and long-term research in areas related to the objects of the Corporation.
>
> 7. To provide its Members with a medium for the exchange, review, and evaluation of such information. . . .(McCallum, 1983, p. 6)

The evaluation team which examined the US/WC program noted the absence of any regularized contacts with like programs. The team recommended formal links with adult education associations and interaction with universities providing similar programs so that experiences could be shared for everyone's benefit (Bertelson et al., 1977, p. 19).

Specific Propositions That Pertain to Construct Six: The Management Function

Specific Proposition 22

The authority and operating relationships must be clearly defined.

There appeared to be few rules established in the literature to guide the information of an authority and reporting structure. Bertelson and the evaluation team (1977) of the US/WC program recommended that the structure of an off-campus program should be determined by function rather than by traditional university practice. Also, the team proposed a decentralization of decision making, away from the campus at the program location (p. 21). Peterfreund (1976) felt that corporate education and training heads require direct access to top executives (p. 37).

Fricano (1975) presented a model for in-plant education. He clearly placed the in-plant program in a school of continuing education (p. 1). Massey (1979), in describing the University of Maryland's University College world-wide program stated that the usual structure in this program has a University of Maryland field registrar who is located on the military base and a University of Maryland area director, who is not (p. 12).

Inherent in the authority and reporting relationships of an organization is the notion of the operating structure of the program and where it fits within the organization to which it belongs. Barber (1972) described the organization of traditional cooperative programs in Canada. The faculties that sponsor smaller cooperative programs are generally responsible for their operation. However, Waterloo University, which has perhaps the largest cooperative program in Canada, has established a department of coordination that deals with policies, structure, and budgeting for all cooperative programs within the university (p. 94).

Ruyle and Geiselman (1975), in their survey of nontraditional programs, discovered that 46% of the programs surveyed were responsible to offices governing traditional college programs. Twenty-eight percent were administered by special divisions such as extension, continuing education, evening division, or a division of liberal studies. Twenty percent were separate and directly responsible to an executive officer within the institution. Bertelson et al. (1977) strongly recommended that for the Wayne State program a special adult education unit should be established within the College of Lifelong Learning that would be responsible for off-campus teaching and research (p. 18).

Specific Proposition 23

The management subsystems for the program must include a coordinator for the host business.

Several off-campus or cooperative programs have provided a model of management responsibility for the organization as a whole. Houze and Simon (1981) outlined the duties of the employer coordinator in a cooperative program, a position they felt was key to the success of such a program. According to them, the coordinator, through recruiting students and cooperative supervisors, interpretation of policies, evaluating and providing linkages, "sets the tone of the organization's implementation and operation of the program" (p. 31). In a description of general in-plant education courses, Fricano (1975) detailed much the same responsibilities for a director of in-plant education (p. 2). The coordinator's tasks in the operation of educational consortia in

Alberta were clearly defined by Alberta Advanced Education (1982), "to perform programming, managerial, and administrtive duties related to the Consortium operation" (p. 4).

The notion of boundary spanning responsibilities is implicit in the above descriptions. Several writers outlined those responsibilities more explicitly. For example, the employer coordinator in a cooperative program was charged with developing relationships within the corporate organization and the academic community simultaneously (Houze & Simon, 1981, p. 31). The base education service officer (ESO) was described as the liaison person between the military and the educational institution (Massey, 1979, p. 12). Fricano's job description for the director of in-plant education included a liaison function between the college and the community (1975, p. 2).

Specific Proposition 24

Coordination of all of the elements of an organization is essential to the success of a cooperative program that has a number of partners.

In its responsibility for overseeing the entire organization, the management person or group must define the structure of the organization, and, in doing so, must ensure that the organization is sufficiently adaptive to environmental needs and pressures that it survives. This involves maintaining the delicate balance between differentiating internal subsystems within the organization into clear work units and integrating the entire organization to allow organizational goals to be reached (Broskowski & Driscoll, 1978, pp. 52-53).

Houze and Simon (1981), describing a model for a traditional cooperative program, likened the task of maintaining the commitment to quality from all the partners to walking a tightrope. However, using their analogy, if the involvement of the partners is coordinated and their commitment gained, the tightrope can be walked (p. 33).

Clark and Rinehart (1982) identified cooperative planning as the most important factor in education-industry joint efforts, allowing identification of the needs of both parties, the development of goals and objectives to meet those needs, and the acquisition of appropriate resources necessary for program implementation. They further recommended the formation of an advisory council that would "enable business, labor, government, and professional sectors to help colleges and universities plan and implement better cooperative programs" (p. 4). An additional coordinative mechanism included was evaluation of the joint program. The evaluation should be planned by the cooperating partners to answer questions about program results, whether expectations had been met, and to make recommendations for areas of improvement. A joint effort such as this contributes to feelings of ownership that facilitate program coordination (p. 4).

Flynn (1982) provided an example of the kind of coordinate activities undertaken by one college that delivers CETA programs. San Diego Community College District "serves 2,500 participants each year, contracting with 25 institutions for provision of 70 courses" (p. 3). This kind of activity provides a wide choice of courses to participants and a number of options to the cooperating institutions.

A clear prescription for what constitutes coordinative activities was provided by Broskowski and Driscoll (1978): "these mechanisms include policy structures, formal hierarchies, committees of overlapping membership, staff support for line positions, integrated information and evaluation systems, and intermittent reorganizations that break up rigid subunits and build new intraorganizational arrangements" (p. 53).

The Specific Propositions Enumerated

In order to provide a summation, the following is a listing of the 24 specific propositions derived from the basic systems theory constructs and relating to postsecondary/business cooperative baccalaureate degree programs.

1. A cooperative program must reflect the legal requirements of its member organizations.
2. There must be a clear statement of the purposes and goals of a cooperative program.
3. The function of the cooperative program must be understood and acknowledged by the cooperting organizations.
4. Accreditation and quality control standards are necessary to provide the basis for the specifications of the educational program.
5. Early in the planning of a cooperative program, the various interest groups must agree on a clear definition of the meaning of the degree to be offered.
6. Admission standards for business-based educational programs must be clearly defined and established consistent with the special needs of the target group considered.
7. Criteria for grading and graduation must be consistent with the needs of the adult student.
8. The success of a cooperative educational program will be enhanced if the location of the classes is at the business site.

9. To ensure the effective implementation of a cooperative educational program, a structure must be in place that connects the educational system and the corporate system.
10. A cooperative program design must include allowances for possible divided loyalties of faculty and students.
11. To ensure sufficient and appropriate students for the program, active recruitment must occur within the cooperating corporation.
12. To ensure that the special needs of adult student/workers are met a dual student advisement program is necessary.
13. Quality instruction that is appropriate to adult learners is essential.
14. Since a business-based baccalaureate program does not lend itself to the traditional rewards for faculty of tenure and promotion for research and publication, other equitable reward mechanisms must exist.
15. To ensure business commitment in a cooperative baccalaureate program the advantages to business must be clearly defined.
16. There must be a clearly identifiable person or unit whose task it is to conduct environmental transactions.
17. Provision must be made within a cooperative program for internal support and processing functions relative to library services, financial accounting, and student records.
18. The curriculum must reflect the interests of the sponsoring educational institution and the needs of both the sponsoring business and the potential students.
19. The interests of the various parties that comprise the funding for a jointly-sponsored educational program must be carefully articulated during the planning stages.

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20. To ensure an appropriate balance of activity within the organization, a method of obtaining both internal and external feedback is necessary.
21. Cooperative program membership in relevant organizations is an essential source of information.
22. The authority and operating relationships must be clearly defined.
23. The management subsystem for the program must include a coordinator for the host business.
24. Coordination of all the elements of an organization are essential to the success of a cooperative program that has a number of partners.

CHAPTER IV

THE DESIGN

The purpose of this chapter is to detail the design for a business-based baccalaureate degree granting program that effectively links the corporate sector, institutions of higher education, and the student/worker. The design proposed the creation of a consortium of higher-education institutions whose function would be to market and assume the central responsibility for delivery of off-campus educational programs to the business sector. Utilizing the consortium structure which has its own administrative capability serves a dual purpose: it offers the business partners and students the educational resources of a number of institutions, and it removes the onus of delivery and program administration from any one institution. The consortium then becomes the linking agency which represents the combined resources of the educational institutions, includes its specialized expertise in adult programs, and through contractual arrangements with all involved institutions, delivers an integrated degree program to a business site.

The design was developed through a process of examining the literature of general living systems theory and arranging the characteristics of organizations as explained by the theoretical base into six constructs that account for all the components required to develop and operate a new organization. The second phase, based on the theoretical constructs was the development of specific propositions applicable to the creation and operation of a major cooperative educational program.

The design is comprised of four basic elements: the organizational blueprint, the structure, the program, and financing. Each of the elements contains organizational components that are supported by the rationale of the specific propositions outlined in Chapter III and has its origin in the organizational constructs explained by general living systems theory.

Design Element I: The Organizational Blueprint

The theoretical basis for the organizational blueprint is in Construct One. Specific Propositions 1, 2, 3, 4, and 5 contain the descriptions of practice in higher education that were used in developing the model. The specific propositions were concerned with legal issues, purposes and goals, roles, quality control, and the meaning of the degree.

The design for an organization often has its basis in government statues, in its mission statement, and in its statement of purpose and goals. Components that make up an organization and their functions should be directly attributed to the abstract concepts contained in legislation and in role statements.

The legal requirements imposed by state or provincial legislation regarding postsecondary education have an effect on the creation and implementation of new and higher education programs. A new program, such as is envisioned herein, would be governed by the controls imposed regarding who in the legislation region may confer degrees, by statutes and procedures regarding funding, by the government mandated coordination mechanisms, and by any policy regarding new program approval mechanisms.

As was indicated in previous sections, corporate sector decisions to become involved in educational endeavors rarely are controlled by legal considerations. Rather, such a decision is an internal policy matter made by senior executives according to the decision making procedures usual to their organization.

A review of the current thinking about business needs and societal demands for life-long learning opportunities contained in Chapter III leads to the following illustrative mission statement for the consortium, which provides its role of definition.

> The consortium will serve as the link between the business sector, institutions of higher learning, and workers/students by the development and delivery of business-based baccalaureate degree-granting program options that are responsive to business needs and accessible and appropriate to workers.

The consortium must have a clear statement of organizational goals. The goal statement will include a general mission statement from which arises a number of more specific goal statements. Construct One established that the environment, to a great extent, defines organizational goals. Further, organizational survival is dependent upon its ability to operate consistently with those goals and to reassess goals in relation to changing environmental demands. Attending to goals also allows the organization a means of measuring effectiveness.

Based on the literature reviewed in Chapter III, a number of consortium goals arise from the mission statement:

1. The consortium will serve as a means by which the educational community and the business sector gain a greater understanding of the others' needs and goals through collectively planning the educational program.
2. The consortium will provide assistance in the design of program and options that are appropriate to the adult learner.
3. The educational program will conform to larger educational goals of contributing to an enlightened population.
4. The consortium will arrange for the delivery of educational program offerings at a time and place suitable to the cooperating business and its employees.
5. The consortium will ensure that business-based programs conform to existing standards requisite for the completion of a baccalaureate degree.

Quality control standards are important for the consortium programs to assure the business partner of the worth of the financial commitment and to provide the program graduates with universal credibility for the degree obtained. Thus, a new consortium has the responsibility of working toward the establishment of an accreditation body for business-based programs. In the interim, the quality control/ accreditation standards that apply to the sponsoring postsecondary institutions must provide the necessary quality assurance to the constituent groups.

The philosophical origins of the baccalaureate degree to be awarded in a cooperative program have a great impact on the composition of the program. The philosophical basis determines the curriculum, admission and graduation requirements, and the added skills that the graduates will possess. The background provided in the specific propositions formed the basis for the following principles to be considered in planning the philosophical rationale for the cooperative program:

1. Representatives from the business sector, the higher education community, and the student group are to be involved in the planning process.

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2. The business group can be expected to have clear needs and interests and thus will be important contributors to decisions regarding the meaning of the degree.
3. The higher education group can be expected to have interests in establishing standards necessary for the conferring of degrees and providing academic expertise to the process.
4. The consortium contribution to philosophical decisions can be expected to include the thinking that makes adult part-time degrees different from the traditional degree.
5. Involvement of the potential student group can be expected to provide direction regarding their needs and interests.

Design Element II: The Structure of the Consortium

The organization's function, philosophical foundation, and goals determine the structure of the organization and its relationship with the other partners. For example, the need to provide a linkage between business and higher education that is acceptable to both groups provides the motivation for proposing the creation of an educational consortium. The consortium's function, that of being the delivery agency for a degree granting program, determines the necessity for a number of the components related to linkages with business and potential students, and to gaining access to the higher education system. Also, the internal make-up of the consortium is a reflection of its function. In this instance, the internal structure will include management, curriculum development, institutional liaison, business liaison, student advisement, research and evaluation, and a business office. The basis for the structure of the consortium is founded in

Constructs Two, Three, Four, Five, and Six that relate to boundaries, bringing energy into an organization, transforming inputs into outputs, information, and management. Details of practice in the fragmented examples of off-campus programs for the elements of the structure were described in Specific Propositions 9, 12, 13, 15, 17, 18, 20, 22, 23, and 24 that describe practice in the areas of linkages, student advisement, adult learners, industry commitment, internal support functions, curriculum, feedback, reporting relationships, program coordination, and organizational coordination.

The consortium design for delivering the business-based program was chosen from among several possibilities on the basis of several convincing advantages. In any one business/consortium contract, the institution of higher learning that will ultimately grant the degree, will have prearranged any additional program offerings from other institutions that will be included in the overall degree. An educational consortium composed of all of the postsecondary institutions in a region ensures maximum access to a variety of educational resources. In most jurisdictions, for example, the community colleges provide local opportunities for higher education, especially courses in basic skills, study skills, and life enrichment. In addition, practice dictates that the community colleges have well-articulated university transfer programs. Including the community colleges in the consortium proposed provides several distinct advantages. Because of their philosophy of accessibility, community colleges exist in many more centers than do baccalaureate degree-granting institutions. The widespread existence of the colleges would ease considerably the logistics of regional business-based delivery.

The involvement of all postsecondary institutions in a region would provide the opportunity to deliver the educational program easily to a number of businesses in a large geographic region, utilizing faculty and other resources. The diversity among institutions would increase the possibility of obtaining a broad range of programing options. Also, a positive effect could be produced by eliminating the institutional rigidity that often is the result of the sole proprietorship of a program.

In Chapter III, Specific Propositions 10 and 13 included a review of the recommended characteristics of faculty who teach in nontraditional programs. Involvement of community college faculty in a nontraditional program could well alleviate some of the potential problems raised in Chapter III. By virtue of their familiarity with the broad range of capabilities of community college students, it is possible to infer that they might possess the characteristics for instructing nontraditional students recommended in Chapter III.

If the consortium is to provide an effective linkage among business, postsecondary institutions, and the students, then elements within the organization must be created whose prime purpose is linkage. One such element is a permanent advisory group to the consortium. The advisory group should be composed of representation from industry, government, labor, and the postsecondary institutions. The function of the committee is to provide information from the environment; particularly in respect to the needs and interests of the groups represented. The committee should also review consortium policy and results in order to make recommendations, again from an environmental perspective.

The organizational structure of the consortium is determined by its functions. Thus, elements of the consortium will be responsible for interface with business and the postsecondary systems. The special requirements of the students determine the existence of a curriculum and program development unit and a capability of student recruitment and advisement. The new and unusual qualities of a business-based program indicate the need for a research and evaluation function. A business office is required to perform budget, collection, disbursement, and purchasing activities. The various elements of the consortium will, of course, be coordinated and managed by a consortium director. An organization chart presented in Figure 2 provides an overview of the consortium structure.

The consortium director has the ultimate responsibility for managing and coordinating the various consortium activities and for ensuring that an adequate exchange of information occurs among the participating groups. The functions of the consortium director have their theoretical foundation in Constructs Two and Six and are drawn from descriptions of practice outlined in Specific Propositions 16, 22, 23, and 24 that deal with environmental transitions, responsibilities of management, reporting relationships, and coordination.

The director should possess a number of characteristics that would contribute to the successful operation of the organization. First of these is strong leadership skills. As well, there should be evidence that he or she has the ability to work with both academic and corporate communities. Because the program of instruction is designed for working adults, the director requires an understanding of, and a commitment to a philosophy of adult education. Ideally, his or her

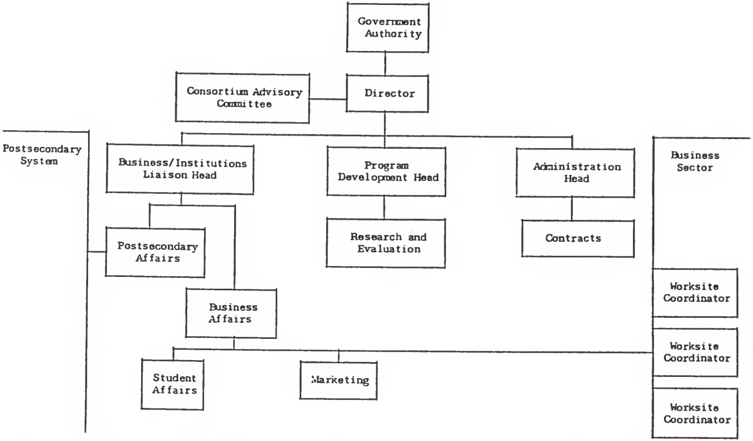

Figure 2. Organizational Chart for a Corporate/Postsecondary Educational Consortium

previous experience should consist of a combination of business-based training and academic administration and teaching.

Because the consortium director functions at the strategic level of management, the responsibilities of the position reflect the diversity of the activities within the organization. With the three major unit heads--Business/Institutions Liaison, Program Development, and Administration--the director's task is to ensure that the consortium mission and goals are realized. The director must ensure that the processes of planning, goal setting, and budgeting occur in order to provide adequate support for the organization. It is the director's responsibility to manage linkages, both within the consortium and between it and organizations in its environment. One of the linkage duties would be to sit as an ex-officio member of the advisory committee. As the senior person in the consortium, the director must also provide leadership in the field of development and delivery of nontraditional educational programing.

The program development unit has the basic responsibility for translating the abstractions of the consortium mission statement and goals into the reality of a postsecondary educational program for working adults. The work of the program development unit is driven by the values expressed in the statement of the meaning of the degree, in the consortium's mission statement, and in the consortium goals. The functions of this unit are derived from the theoretical foundations found in Constructs Four and Five and from the practices of adult education outlined in Specific Propositions 6, 18, and 20.

The necessity for a consortium program development unit lies in the special learning needs of adults, in the probably nontraditional educational background of the students, and in the necessity for designing a program that incorporates the time constraints imposed by the working day of the students. Thus, the unit staff will be responsible for planning curriculum, instructional delivery methods, and sequence and timing of the content. Because of their expertise in adult development, members of this unit should also prepare and deliver faculty development programs in order to assure a core of faculty members who specializes in adult instruction.

Because the output of the program development unit is central to the work of the organization, the unit must establish points of interface with many of the consortium components. As was indicated above, the organization's philosophical statements determine the outcome of the program. As a member of the senior management group, the unit head has a part in deciding those philosophical statements. He or she is the point of contact, then, with the organizational blueprint and has the responsibility of ensuring that the program reflects the intent of the blueprint.

Information from the cooperating postsecondary institutions and the business sector is essential to the work of the program development unit and is obtained through the establishment of regular contact with the business/institutions liaison unit. The business affairs section can provide direction concerning the needs of the business partners and the postsecondary affairs section, also as a part of business/institutions liaison, it is the means of acquiring information about student requirements and achievement.

The research and evaluation component of the program development unit provides the means by which the organization determines how well it has met its goals. Also, this unit is an important part of the planning cycle by virtue of its responsibility for conducting program-related research. Thus, its function will include conducting needs assessments, regular program evaluation studies, and the student course evaluations.

This section should collect information pertinent to the design and delivery of adult, nontraditional educational programs as part of the planning and program design process. As a result of the information collected, recommendations can be made to the management group regarding grading practices and admission and graduation standards.

The business/institutions liaison unit is responsible for bringing together information and activities relating to the common interests of the educational and business partners. Through the various functions of the unit, the unit head ensures sufficient resources to deliver the educational program that satisfies the requirements of the students, the business, and the educational institution. Because of the need for a strong linkage between the business and educational sectors, the consortium liaison responsibilitites are incorporated in the same unit.

The postsecondary affairs section serves as the point of contact with the educational institution and provides the linkage between the program development unit and the institution. One of the chief responsibilities of the unit is arranging for faculty to teach in the business-based program. The faculty recruitment process is a specialized one requiring the faculty members be screened for their capabilities of teaching and relating to adult, nontraditional students. It is through the postsecondary affairs section that faculty can take advantage of the faculty development programs designed to increase competency in adult instruction.

The basis for the work of the postsecondary affairs section is found in Construct Two and in the review of the postsecondary practice outlined in Specific Propositions 7, 9, 10, and 14, which are concerned with grading and graduation criteria, linking structures, developing loyalties, and faculty rewards.

For each specific business program option it is possible that courses leading to a degree will have elements of uniqueness. While much of the course planning occurs in the consortium program development unit, the degree-conferring institution must approve the program as meeting institutional standards. Timing and sequence of course offerings, grading practices, and advance credit for prior student learning must be negotiated with the institution.

The location and nature of the business contracting for an educational program will have an effect on what institutions are involved in delivering the instruction. Costs related to distance and institutional capabilities could well detemine that several institutions should be involved. For example, it is possible that a community college would deliver the lower division part of the program. The postsecondary affairs section must plan with the institutions to gain prior commitment to the total program and to an articulation agreement as well as arranging for one "lead-role" institution to ultimately grant the degree. Institutional program delivery costs must also be determined.

Also, within the business/institutions liaison unit is the business affairs section that completes the linkage between educational institutions and the business sector and the students. The need for the existence of the business affairs section rises from Constructs Two and Three, and Specific Propositions 9, 11, 12, and 15, that deal with linking the educational and business systems, student recruitments and advisement, and program marketing.

The marketing capability of the consortium is essential to its survival. The initial marketing contact with business leaders must demonstrate the advantages of upgrading the skills of employees in terms of increasing the businesses' ability to deal with technological change, achieving greater productivity, and reducing staff turnover. The contributions of an educational program to total human resource planning forms part of the "sales" presentation. The individual in charge of the marketing function needs to understand specific business dissatisfaction with traditional postsecondary systems and to develop a range of advantages to the business that would arise from being a contributing partner in the program design.

The business affairs section works with business human resources staff to determine staff development and skill needs and provides this information to the consortium program development unit. Also, business facilities for instructional space and the timing of courses will be negotiated by this section.

It is anticipated that the consortium will require a student affairs function to coordinate a business site. The rationale for the creation of a student affairs sub-section lies in Specific Propositions 11, 12, 13, 16, 17, and 22, that concern student recruitment, advisement, conducting environmental transactions, provision of support functions, and membership in relevant organizations. The central coordination for student affairs should occur here. The person in charge must ensure that there is adequate student advisement for each business program option offered by the consortium and accumulate student and financial data for transmittal to the appropriate sections.

Each business-based program should have a worksite coordinator assigned to it. The position is responsible for a variety of duties, primarily student advisement and administration. The student advisement function includes recruitment and ongoing counseling; the administrative tasks range from ensuring adequate instructional space and resources to collecting student program and financial data. The student advisement process must be carried out in close coordination with the manpower planning and staff development work of the corporate human resources staff. The worksite coordinator must have expertise in adult counseling, possess an understanding of adult development and educational barriers, as well as an understanding of the career development process. As the business-based contact for faculty, students, and human resource staff, the worksite coordinator can provide direction to the program development unit regarding program needs.

The head of the administration unit is responsible for the financial affairs of the consortium and for developing and administering its contractual relationships with the various program partners. The activities of the administration unit arise from the theoretical base of Construct Five and the review of practice contained in Specific Propositions 17 and 19: internal support functions and funding arrangements.

The financial basis for the consortium operation is a combination of government support, student tuition, and industry payment for program delivery. These sources of funding must cover both consortium operational costs and program delivery costs. To that end, the administration unit must prepare yearly budget projections and develop and maintain a system for financial control.

In order to ensure that the objectives of the postsecondary and business partners have been fully understood and agreed to, the relationship through the consortium should be a contractual one. The contract should contain specific details regarding services to be delivered and financial obligations of the parties involved. The contracts section will develop and administer the contracts as an extension of its financial responsibilities.

Design Element III: The Program

The program is determined by a number of factors: the academic needs of the students, the requirements of the employers, and those of the postsecondary system. The guidelines for a business-based baccalaureate program outlined below emanate from Constructs Two and Three, which explained the concepts of boundaries and processing matter-energy. The Specific Propositions that provided the basis for the formulation of the guidelines were 1, 2, 3, 4, 6, 7, 8, 18, and 21 relating to legal requirements, purposes and goals, the meaning of the degree, admission standards, criteria for grading and graduation, location, curriculum, and membership in relevant organizations.

Because of a number of factors, including the differing needs of students, the requirements of the business partners, and the involvement of a number of postsecondary institutions, each business-based program will have unique characteristics. Thus, the guidelines that should influence the program design are as follows:

1. The program should have a strong liberal arts component that exists to contribute to the students' broadened knowledge.
2. A dual concentration of course selection, a major and minor field of study for example, should be available in order to be responsive to business and student learning requirements.
3. Instructional delivery methods should be planned using the principles of andragogy.
4. Course offerings should be scheduled around the working lives of the students, including a combination of daytime classes, evening classes, and weekend seminars.
5. Because the student group will not have a homogeneous educational background, developmental courses in reading, writing, and study skills should be available.
6. The degree-conferring institution should agree to granting credit for a range of specific prior learning experiences.
7. The program should meet the standards necessary for completion of a degree of the "lead-role" institution.
8. A prearranged system of course articulation should be agreed upon by the cooperating postsecondary institutions.
9. Course completion requirements should be competency based.
10. In the absence of an international accrediting body for nontraditional programs, a combination of quality control checks composed of the performance standards agreed upon by the regional

accrediting associations in the United States and standards acceptable to the cooperating postsecondary institutions should be imposed.

11. Faculty and program development staff should undertake regular research in the areas of nontraditional programs and specific program impact.

Design Element IV: Financial Arrangements

Funding a cooperative, nontraditional, degree-granting program requires distributing a balance of financial responsibility among the partners that reflects the interest and the potential for gain of each of the partners. Because it must be acknowledged that different political jurisdictions have different legal requirements for funding postsecondary education, no one design will apply universally. The following outline for financial arrangements is intended, then, to serve as one of an infinite number of funding plans. The theoretical basis for financing lies in Construct Five, pertaining to exchange of information, that in terms of living systems theory includes monies; and in the discussions of actual practice that were presented in relation to Specific Proposition 20, financing cooperative programs.

There are a number of costs to delivering an off-campus program that must be taken into consideration when financial planning is occurring. The consortium itself requires access to ongoing funds in order to plan and carry out its activities. It will require sufficient resources to cover the costs of staff, accommodations, related staff support activities, and supplies and services. Also, especially in the initial stages, program developmental costs will be large. The salaries and travel for faculty must be considered. In apportioning financial responsibilities, a number of indirect costs are a factor. These include dedicated instructional space, foregone worker time, released library holdings, and maintaining accounts and student records.

Government support of higher education has been justified by the view that a well-educated citizen enhances the quality of life and economic stability of a nation. More specifically, higher productivity, which benefits the nation, has been linked to increasing the education of workers. Thus, support for a consortium from state/provincial and federal governments is a justifiable investment. As such, total development costs for the consortium activities should be born by state/provincial and federal governments on an equal, cost-shared basis. In order to ensure ongoing consortium operations, the two orders of government should provide 50% of operational costs on the same cost-shared arrangements, in addition to the standard support provided to the educational institutions.

The workers/students stand to benefit from completing a baccalaureate degree through the increased potential for earning and labor market mobility. Therefore, it is reasonable that they should pay regular tuition costs at a rate equivalent to that paid by full-term, daytime students. In most jurisdictions, tuition accounts for between 25% and 30% of actual instructional costs.

Postsecondary systems have universally experienced diminishing resources; a situation that has resulted in an inability to provide new programs. As long as this is the case, these institutions will be unable to contribute in a real financial sense to an off-campus program. However, there are a number of contributions that can be absorbed by postsecondary institutions.

The postsecondary members of the consortium can establish a "pool" of instructional staff whose campus teaching load is not at institutional maximum. The institutions involved in specific programs can be expected to provide adequate library support where the instructional methods require it. As well as keeping the usual student and financial records, the postsecondary members of the consortium can contribute time and expertise for the budgeting and financial record keeping activities of the consortium.

The business sector is accustomed to being financially responsible for its own training activities initiated as a result of specific needs. As one of the several beneficiaries of a business-based degree program, some financial support should come from this sector. The financial model developed herein would require direct financial costs of approximately 25% of full cost to be paid by the business partners. Indirect support from business would be in the form of instructional space, foregone worker time, and equipment, where appropriate.

The plan outlined above acknowledges the benefits that are likely to accrue to each of the interest groups and to assign financial responsibility accordingly. Students, various orders of government, and the business partners contribute in a real financial sense with additional indirect costs being absorbed by business and the postsecondary institutions.

The Consortium in Review

The educational consortium to deliver baccalaureate degree-granting programs was designed and presented as the linking agency that provides an education connection for a postsecondary system, the business sector, and working people who wish to be students. The existence of such a consortium was justified in terms of cost benefits to the public at large, to the students, and to the businesses that participate. The model for the consortium was organized into four elements: the organizational blueprint, the structure, the program, and financial arrangements.

Design Element I, The Organizational Blueprint, established the origins of goals and objectives in societal values, in legislation, and in the needs of the organizational partners. It was in this portion of the design that the differences were established for a degree-granting program that is intended for adult working students.

Design Element II, The Structure of the Consortium, stressed the linking nature of the new organization. The various internal components, business/institutions liaison, program development, and administration were presented as being interdependent upon one another through a mutual need to link the postsecondary system and the business sector. It was demonstrated that intensive internal coordination was vital to the work of the organization. A management group consisting of the consortium director and the heads of the three units were recommended. The establishment of an advisory board consisting of representation from business, government, labor, and the postsecondary institutions was proposed in order to ensure regular input of environmental information to the consortium.

Design Element III, The Program, outlined the function of a program development unit. Because each business-based program should have unique characteristics, a series of guidelines for the formulation of programs was developed. The guidelines related to recommendations for course content, instructional methods, the timing of course offerings, inter-institutional planning, quality control, and research activities.

The proposal for Financial Arrangements, Design Element IV, was developed as an example of one of many ways a consortium could be funded. Legal and financial practices of a given region could have a marked affect on the manner in which a consortium is financed. The major principles that should affect the funding arrangements are the determination of who benefits from the program and the apportioning of payments accordingly.

CHAPTER V

CONCEPTUAL VALIDATION OF THE DESIGN FOR A COOPERATIVE POSTSECONDARY/BUSINESS BACCALAUREATE DEGREE PROGRAM

The focus of the present chapter is the results of the conceptual validation of the design for a cooperative postsecondary/business baccalaureate degree program. The process of conceptual validation involved three steps: constructing the validation package, field testing the instrument and making recommended modifications, and conducting the validation which was completed by a panel of experts.

The validation package contained a brief background to the development of the design, instructions outlining the method for responding for the panel of experts, and a synopsis of the design. The design section was organized into 5 parts: the organizational blueprint, the structure of the consortium, the program, financial arrangements, and a subjective evaluation of the design. The first 4 parts contained a series of design elements, drawn from Chapter IV, that were considered fundamental to the design. On the page following the design elements, the constructs from Chapter II and the specific propositions from Chapter III that contributed to the design elements were presented. Two 5-point scales were located beside each design element. One scale required the respondents to judge the consistency of the design element in its development from the theoretical base of general living systems theory organized into constructs and the specific propositions drawn from practice in cooperative programs. The second scale elicited a judgment regarding the necessity of the design element for implementation of the design.

The fifth part, the subjective evaluation, required a judgment of the overall design for both consistency and necessity for implementation. Five-point scales were again used.

The second step was a field test of the instrument. The participants in the field test were a senior government official with expertise in training and manpower planning, an instructor at a postsecondary technical institute, and a private-sector consultant whose major focus has been manpower planning and training. The group responded individually and each was asked to make comments regarding clarity of the instructions, ease of response, and the overall clarity of the synopsis. Modifications were made on the basis of the comments received.

As was indicated above, the design section was organized into 5 parts. The organizational blueprint section contained 6 statements considered necessary to the planning of a cooperative program. The structure section had 9 statements concerning organizational components that were deemed basic to an effective organization. The program section contained 1 statement with 9 sub-parts that were guidelines for designing a cooperative program. The financial arrangements section had 6 statements that were recommendations for a funding plan. The final section, the subjective evaluation, contained statement 23, that asked for a judgment regarding the design's potential for implementation.

The first 22 statements required a dual judgment elicited by 5-point scales. The first scale, Necessity for the Design of an Effective Postsecondary/Business Cooperative Program, required a response to each statement as follow: 1 - It is not necessary, 2 - Its necessity is questionable, 3 - Unable to judge, 4 - It is necessary, 5 - It is essential. The second scale, Consistency with the Constructs and Specific Propositions, required a response to each statement thusly: 1 - It is not consistent, 2 - Consistency is doubtful, 3 - Unable to judge, 4 - It is probably consistent, 5 - It is consistent. Finally, statement 23 asked the respondents to judge the design's potential for implementation in the following manner: 1 - There are serious deficiencies and it could not be implemented, 2 - There are deficiencies and implementation would be difficult, 3 - Unable to judge, 4 - There are deficiencies but it could be implemented, 5 - The design approaches completeness and it could be implemented.

The complete conceptual validation package as it was sent to the panel of experts is entitled "Synopsis of the Design" and is located in the Appendix.

The third step in the conceptual validation process was conducting the validation by a panel of experts. The panel consisted of a senior manager responsible for human resources in a large business, the vice-president (recently retired) of a university, a university professor with a joint appointment in a faculty of business management advisory institute and a faculty of extension, a government official responsible for a provincial community school program, and a private sector consultant whose specialty was manpower planning. Each was contacted by telephone to gain his agreement to participate and the validation package with a covering letter was mailed. A sample covering letter is located in the Appendix. Each panel member responded independently.

Once all five validation packages were returned, the results were compiled. What follows is an analysis of the judgments of the panel of experts. Tables 1 through 5 show the individual responses of each panel member and the median scores of the responses. The discussion that follows if focused on the median scores.

Responses to Statements Concerning the Organizational Blueprint

Individual responses to the organizational blueprint statements and response medians are detailed in Table 1. Of the 6 statements relating to the organizational blueprint on the necessity scale, 5 received median scores of 4 or above. These 5 statements were judged necessary or vital to the design. The statement "business sector decisions to become involved in educational endeavors are rarely controlled by legal considerations", received a median score of 2, indicating that the panel judged it of questionable necessity to the design.

The consistency scale required panel members to judge each statement's consistency with the general living systems theory constructs and the specific propositions drawn from descriptions of practice in cooperative programs. All 6 statements pertaining to the organizational blueprint received median scores of 4 or greater, indicating that the panel viewed the statements as consistent with detailed theory and descriptions of practice.

Table 1

Responses of the Panel Members to Statements Concerning the Organizational Blueprint

	Panel Member Responses											
	A		B		C		D		E		Response Medians	
Statement Number[1]	Nec.[2]	Con.[3]	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.
1	4	4	2	3	4	4	5	5	4	5	4	4
2	2	2	4	2	2	4	5	5	2	4	2	4
3	3	3	5	4	5	4	4	5	4	5	4	4
4	4	4	5	4	5	4	5	5	4	4	5	4
5	5	4	5	3	4	4	2	2	5	5	5	4
6	5	5	5	4	5	4	5	5	4	5	5	5

Notes

Nec. = Necessity   Con. = Consistency

1. The statements are fully outlined in the Appendix.
2. The necessity scale required judgments about the necessity of each statement for implementation. 1 - It is not necessary; 2 - Its necessity is questionable; 3 - Unable to judge; 4 - It is necessary; 5 - It is vital.

3. The consistency scale elicited judgments regarding each statement's consistency with the general living theory constructs and specific propositions drawn from descriptions of higher education practice from which it was developed. 1 - It is not consistent; 2 - Consistency is doubtful; 3 - Unable to judge; 4 - It is probably consistent; 5 - It is consistent.

Responses to Statements Concerning the Structure of the Consortium

The section regarding consortium structure contained 9 statements pertaining to necessary components of the organizational structure and the responsibilities inherent in each of the components. Table 2 details the responses of individual panel members and response medians.

On the necessity scale, one statement, that recommended the consortium model as the means of program delivery received a median score of 3. This indicated that the panel members were unsure that the consortium arrangement was the best delivery method. The remaining 8 statements received median scores of either 4 or 5, reflecting the panel's judgment that the statements were either necessary or vital to the design.

All 9 statements concerning the structure of the consortium received scores of 4 or 5 on the consistency scale. Panel members judged the statements as either probably consistent or consistent with the general living systems theory constructs and the specific propositions that pertained to structure.

Responses to Statements Concerning the Program

The program section consisted of 11 guidelines for program development that should account for the requirements of the students, the employers, and those of the postsecondary system. Table 3 contains the responses of individual panel members and response medians.

On the necessity scale, one guideline for program development received a median score of 3, indicting that the panel was unable to judge its necessity to the design. This was the guideline that

Table 2

Responses of the Panel Members to Statements Concerning the Structure of the Consortium

	Panel Member Responses											
Statement Number[1]	A		B		C		D		E		Response Medians	
	Nec.[2]	Con.[3]	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.
7	3	3	2	4	4	4	2	1	4	5	3	4
8	5	4	4	4	4	5	5	5	4	5	4	5
9	4	4	4	4	5	4	5	4	5	5	5	4
10	5	4	5	5	4	2	5	5	4	4	5	4
11	4	4	5	5	4	4	5	5	4	5	4	5
12	2	3	4	4	4	4	5	5	5	5	4	4
13	5	5	4	4	5	4	5	5	5	5	5	5
14	4	4	5	4	4	4	5	5	4	4	4	4
15	4	4	4	5	4	4	5	5	5	5	4	5

Notes

Nec. = Necessity Con. = Consistency

1. The statements are fully outlined in the Appendix.
2. The necessity scale required judgments about the necessity of each statement for implementation. 1 - It is not necessary; 2 - Its necessity is questionable; 3 - Unable to judge; 4 - It is necessary; 5 - It is vital.

3. The consistency scale elicited judgments regarding each statement's consistency with the general living theory constructs and specific propositions drawn from descriptions of higher education practice from which it was developed. 1 - It is not consistent; 2 - Consistency is doubtful; 3 - Unable to judge; 4 - It is probably consistent; 5 - It is consistent.

Table 3

Responses of the Panel Members to Statements Concerning the Program

	Panel Member Responses											
Statement Number[1]	A		B		C		D		E		Response Medians	
	Nec.[2]	Con.[3]	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.
16 a)	2	2	5	5	2	4	5	1	3	4	3	4
b)	4	4	3	4	4	4	5	3	3	3	4	4
c)	5	5	4	4	5	4	5	5	4	4	5	4
d)	5	4	5	5	5	3	5	3	5	5	5	4
e)	5	4	4	4	4	4	5	3	5	5	5	4
f)	2	2	3	4	5	3	5	3	4	5	4	3
g)	5	5	5	5	4	4	5	3	4	5	5	5
h)	2	2	5	5	4	3	5	3	4	5	4	3
i)	5	5	3	4	4	4	4	3	4	4	4	4
j)	3	3	3	4	4	4	5	3	4	4	4	4
k)	5	4	4	5	5	3	5	3	4	5	5	4

Notes

Nec. = Necessity   Con. = Consistency

1. The statements are fully outlined in the Appendix.
2. The necessity scale required judgments about the necessity of each statement for implementation. 1 - It is not necessary; 2 - Its necessity is questionable; 3 - Unable to judge; 4 - It is necessary; 5 - It is vital.

3. The consistency scale elicited judgments regarding each statement's consistency with the general living theory constructs and specific propositions drawn from descriptions of higher education practice from which it was developed. 1 - It is not consistent; 2 - Consistency is doubtful; 3 - Unable to judge; 4 - It is probably consistent; 5 - It is consistent.

recommended a strong liberal arts component for the program. The remainder of the guidelines received median score of 4 or 5 indicating that the panel judged them either necessary or vital to the design.

Two guidelines for program development received median scores of 3 on the consistency scale, reflecting the panel's inability to judge the consistency of these guidelines with the theoretical constructs and the specific propositions. Guideline 16(f) recommended that the degree conferring institution should agree to granting credit for prior learning experiences; guideline 16(h) proposed a prearranged system of course articulation among the cooperating institutions. The remainder of the guidelines had median scores of 4 or 5, indicating that the panel saw them as being probably consistent or consistent with the theoretical constructs and the descriptions of practice in the specific propositions.

Responses to Statements Concerning Financial Arrangements

The section on financial arrangements presented a funding plan that emphasized distribution of financial responsibility according to the interests and the potential for gain of each of the partners. This section, containing 6 statements, was intended to be only one of many possible plans that would vary according to the legal requirements of political jurisdictions for funding postsecondary education. The responses of the individual panel members and response medians are detailed in Table 4.

On the necessity scale, 3 statements received median scores of 3 indicating the panel's inability to judge their necessity to the overall design. Two of the 3 statements recommended substantial

Table 4

Responses of the Panel Members to Statements Concerning Financial Arrangements

	Panel Member Responses											
	A		B		C		D		E		Response Medians	
Statement Number[1]	Nec.[2]	Con.[3]	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.	Nec.	Con.
17	3	3	3	4	4	3	5	3	5	5	4	3
18	1	1	4	4	3	3	4	3	3	4	3	3
19	1	1	3	3	3	3	3	3	2	3	3	3
20	5	5	1	4	2	3	5	3	4	4	4	4
21	4	4	4	4	2	3	3	3	4	5	4	4
22	5	4	3	5	3	3	3	3	4	4	3	4

Notes

Nec. = Necessity Con. = Consistency

1. The statements are fully outlined in the Appendix.
2. The necessity scale required judgments about the necessity of each statement for implementation. 1 - It is not necessary; 2 - Its necessity is questionable; 3 - Unable to judge; 4 - It is necessary; 5 - It is vital.

3. The consistency scale elicited judgments regarding each statement's consistency with the general living theory constructs and specific propositions drawn from descriptions of higher education practice from which it was developed. 1 - It is not consistent; 2 - Consistency is doubtful; 3 - Unable to judge; 4 - It is probably consistent; 5 - It is consistent.

government financial support for the consortium because of the benefits accruing to the nation as a result of upgrading labor force skills. The remaining 3 statements received median scores of 4, reflecting the panel's judgment that the statements were necessary to the design.

Three statements regarding financial arrangements received median scores of 3 on the consistency scale indicating the panel's inability to judge their consistency with related theoretical constructs and descriptions of practice in cooperative programs. Direct and indirect costs of operating the consortium were the topic of statement 17; recommendations that government should bear 50% of consortium operational costs because of the benefits derived from upgrading labor force skills. The remaining three statements were judged by the panel to be probably consistent with the theoretical construct and specific proposition, receiving median scores of 4.

Responses Concerning the Subjective Evaluation

Item 23 required the panel members subjective evaluation of the overall design for a postsecondary/business baccalaureate degree granting program, specifically with regard to the design's potential for providing a complete blueprint for implementation. Individual responses of the panel members and the response median are detailed in Table 5.

Four panel members gave the overall design a rating of 4, indicating their judgment that the design contained deficiencies, but could be implemented. The fifth panel member rated it 5, indicating that he felt the design approached completeness and could be implemented. The response median was 4; there were deficiencies in the design, but it could be implemented.

Table 5

Responses[2] of the Panel Members to the Subjective Evaluation

	A	B	C	D	E	Response Median
Statement Number[1]	4	4	4	4	5	4

Notes

1. The statements are fully outlined in the Appendix.

2. The available responses were: 1 - There are serious deficiencies and it could not be implemented; 2 - There are deficiencies and implementation would be difficult; 3 - Unable to judge; 4 - There are deficiencies but it could be implemented; 5 - The design approaches completeness and it could be implemented.

The Results of the Conceptual Validation in Review

A panel of 5 members was asked to review the design for a postsecondary/business baccalaureate degree granting program in order to judge both the consistency of the design elements with their theoretical and practical bases, and their necessity to the overall design. The design was organized into 4 parts: the organizational blueprint, the structure, the program, and financial arrangements. The 4 major parts were composed of design elements intended to be sufficiently prescriptive to serve as implementation rules. In total, the design elements consisted of 32 statements that required judgment from the panel. As well, the panel was asked to judge the design's overall potential for implementation.

For both necessity and consistency scales, only one statement received a median score of 2. This was the statement concerning business sector decisions to become involved in educational endeavors not having legal considerations. The panel felt that the statement was not necessary to the design.

On the necessity scale, panel members gave 5 statements a median score of 3, indicating that they were unable to judge those statements necessary to the overall design. Of the 5 statements receiving a 3 median response, 3 statements were in the financial arrangements section. Of the 32 statements, 11 received a median score of 5 from the panel, indicating that they were vital to the design. The remaining 15 statements had a median response score of 4, reflecting the panel's judgment that they were necessary to design. Twenty-six of the 32 statements were judged either necessary or vital to the design.

No statement received a median score of less than 3 on the consistency scale. Five statements received a median score of 3 reflecting the panel's inability to judge those statements' consistency with related theory and practice. Six statements had a median score of 5 indicating that the panel thought they were consistent. The remaining 21 statements received a median score of 4, rated probably consistent. Twenty-seven of the 32 statements were deemed either probably consistent or consistent with the theoretical and practical constructs and propositions.

As was indicated above, 4 panel members rated the overall design at 4, meaning that they felt that there were some deficiencies, but it could be implemented. The fifth panel member rated it at 5, indicting his judgment that it approached completeness and could be implemented. The median response score was 4, an indication of the panel's positive feeling that despite several deficiencies, the design could be implemented.

CHAPTER VI

SUMMARY, DISCUSSION, AND CONCLUSIONS

Summary

The intent of this study was the development and conceptual validation of a design that would systematically account for the organizational elements necessary to implement a site-deliverable cooperative postsecondary/business baccalaureate degree program. General living systems theory provided the basis from which were drawn 6 constructs whose purpose was to form the theoretical explanation for the operation of a complex organization. The second phase of the study was the formation of specific propositions applicable to a major cooperative educational program. The specific propositions were drawn from the literature concerning cooperative programs and organized according to the structure imposed by the theoretical constructs. The third step of the study was the conceptual application of the specific propositions to a design for a cooperative educational program. The fourth phase involved the conceptual validation of the design by a panel of experts on the basis of (a) its consistency with the constructs and propositions, (b) the necessity of the design elements to the overall design, and, (c) a subjective evaluation of the sufficiency of the design for implementation of a cooperative program.

The study was undertaken as a result of several motivating factors that contributed to its timeliness. Adults began engaging in educational pursuits in growing numbers in the 1960s and 1970s. By the early 1980s, this trend had caused educators to increase their understanding of the adult learning process and to consider program modifications that would meet the needs of their new students. During the same decades, institutions of higher education began planning for a decline in traditional enrollments because of a reduction in the numbers of 18 to 24 year olds in the population. As that planning was underway, a worldwide recession occurred causing many people to choose attendance at an educational institution over unemployment. These factors, combined with shrinking resources for public programs, led educators to become interested in rethinking traditional program delivery methods.

Business and industry, during this same period of time, began to recognize the benefits that accrued from the provision of training and education for employees. Thus, the development and delivery of business-based training and education programs became an educational movement quite apart from traditional public education.

As a result of the growing interest among adults in acquiring further education, the pressures on institutions of higher learning, and the training and education needs of the business complex, attempts have been made to create postsecondary/business educational partnerships. These attempts have been fragmented and, for the most part, have failed to meet the needs of one or all of the interest groups.

As was indicated above, a panel of experts was asked to judge the design for the cooperative program. The design was organized into 4 major sections: the organizational blueprint, the structure, the program, and financial arrangements. The panel was required to judge statements pertaining to each of the sections on two 5-point scales, one relating to necessity to the design and the second relating to consistency with the relevant theoretical constructs and practical specific propositions. A fifth section asked the panel to judge the design's potential for implementation.

The 4 major sections contained a total of 32 statements that required a response from the panel. On the necessity scale, 26 of the 32 statements elicited panel scores of 4 or 5, indicating the panel's opinion that they were necessary or vital to the design. Five statements received a response of 3, reflecting the panel's inability to judge those item's necessity to the design. One statement was judged of questionable necessity.

On the consistency scale, 27 of the 32 statements received a score of 4 or 5 from the panel indicating that the statements were either probably consistent or consistent with relevant theoretical constructs and specific propositions pertaining to practice. Five statements were judged 3; the panel was unsure of the consistency of the statements. No statement received less than 3 on the consistency scale.

In the organizational blueprint section, the majority of the statements received positive responses from the panel indicating both necessity and consistency. The statement concerning legal considerations for business involvement was deemed of questionable necessity to the design--a response to a statement that, in retrospect, was unnecessary.

The structure of the organization section recommended an educational consortium to deliver the programs. Statement 7, which contained the recommendation, received a variety of responses on both scales. Responses ranged from 2 to 4 on the necessity scale, and from 1 to 5 on the consistency scale.

The conclusions of the panel were that 4 of the statements in the structure section were "essential" to the design. The statements concerning the role and representation for an advisory group and the role and function of the director were among those strongly supported. The remaining 2 statements were related to the work of a program development unit particularly with respect to the learning needs of adult students and the relationship between a business affairs section and on-site human resources staff.

All the statements received median scores of 4 or 5 on the consistency scale. Thus, the panel concluded that the statements were either "probably consistent", or "consistent" with the related theoretical constructs and the specific propositions that pertained.

The section concerning the program was organized into 11 guidelines for program development. Panel responses were largely positive for both necessity and consistency.

On the consistency scale, the first guideline recommending a strong liberal arts component of a cooperative program received a median score of 3, with responses ranging from 2 to 5. The human resources manager from business rated it at 2, of questionable necessity. Conversely, both the university vice-president and community schools director rated it 5; that is, "essential" to the design.

Five statements concerning program guidelines were rated "essential" to the design, receiving median scores of 5 on the necessity scale. The first of these was the guideline that advocated the development of instructional delivery methods based on the principles of adult learning theory. The panel strongly supported the recommendation that classes should be offered around the working lives of adults. Also, the panel supported the conclusion of developmental courses in reading, writing, and study skills. The panel judged that it was "essential" to the design to recommend that each program offered off-campus must meet the standards of the institution granting the degree. Finally, the panel endorsed the recommendation that regular research be undertaken in areas of nontraditional programs and specific program impact.

Two statements received a median score of 3 on the consistency scale, with the individual responses ranging from 2 to 5. The first statement recommended that the degree conferring institution agree to granting credit for prior learning experiences. The second statement whose consistency the panel was unable to judge concerned a prearranged articulation agreement among the cooperating postsecondary institutions. The remaining statements were deemed either probably consistent or consistent with the relevant constructs and specific propositions.

The section on financial arrangements contained 6 statements presented as only one of many possible funding plans. This section received a greater variety of individual responses on statements for both scales than the previous 3 sections. Also, the proportion of type 3 responses, indicating the panel's inability to judge necessity and consistency, was greater than the previous 3 sections. No statement received higher than a 4 median response score on either scale. Both necessity and consistency scales received three median scores of 4, and three median scores of 3.

Statement 18 recommended that one or more orders of government bear the costs of program development because of the general benefits that accrue to the nation from postsecondary education. Individual responses ranged from 1 to 4, with the median responses being 4 on the necessity scale and 3 on the consistency scale.

Again, because of the benefits returned to the nation from higher education, statement 19 advocated government financial support for 50% of operational costs. On the necessity scale, the individual responses varied from 1 to 3. Two panel members added a handwritten comment that 50% was a low percentage. Also, the individual responses to this statement for the consistency scale ranged from 1 to 3.

Statement 22 allocated 25% of program delivery costs to the business contracting for the service. While the median score on the consistency scale was 3, the panel members representing business gave that statement a 4 and 5 respectively, indicating that the statement was "necessary" or "essential" to the design. Generally, the panel judged the statement to be consistent with the constructs and the specific propositions.

The subjective evaluation portion of the validation instrument asked the panel to judge the potential of the design for implementation. Four of the panel members rated it at 4: although there were deficiencies, the design could be implemented. The fifth panelist provided a 5 response, indicating that the design approached completeness and could be implemented.

Discussion and Conclusions

The process of developing a design for a cooperative postsecondary/ business baccalaureate degree program was begun by reviewing the

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literature of general living systems theory. The relevant literature was organized into constructs whose purpose was to account for the total operation of a complex organization. The intent was also that the 6 constructs would contain all the vital components for developing an organization. The second step in developing the design included an extensive review of the literature concerning postsecondary/business cooperative programs. The literature that pertained was organized into 24 specific propositions presented according to the structure imposed by the 6 theoretical constructs. In the third step, the design for a postsecondary business cooperative program was constructed. A synopsis of the design, composed of design elements concerning the organization was developed for validation by a panel of experts. The validation package displayed the constructs and specific propositions relevant to the design elements on an opposite page.

The validation panel was asked to judge the consistency of each design element statement with its theoretical and practical bases. Five of the 33 statements received median consistency of 3, indicating that the panel was unable to judge their consistency. Speculation concerning the origins of the panel's inability to judge was not possible as the validation instrument allowed no distinction between the theoretical constructs and the specific propositions. Although 27 of the 33 statements were deemed either "consistent" or "probably consistent", it is noteworthy that only 6 statements received a median response score of 5, the response indicating consistency. The remaining 21 median responses of "probably consistent" reflected the panel's general unwillingness to be conclusive about the consistency of the design with it origins. Two of the panel members indicated in the handwritten notes on their validation instrument that they were unfamiliar with general living systems theory and thus, were not comfortable with making judgments about the constructs. In spite of this, the judgments concerning consistency were generally positive.

The panel was also asked to judge each of the statements for its necessity to the design for a postsecondary/business degree granting program. One statement elicited a median response of 2, indicating that its necessity was questionable. The researcher, in retrospect, determined that it was probably unnecessary to include a statement concerning the absence of legal considerations in business decisions to become involved in a cooperative educational program.

Of the 26 statements judged "necessary" or "essential" to the design, 11 were judged "essential". Again, the median response scores indicated that the panel was generally supportive of the necessity of the design elements to the design.

As was indicated above, several of the design elements received a range of individual responses on the necessity scale. The first of these was design element 7, that recommended an educational consortium model for program delivery. Individual responses ranged from 2 to 4. It is possible that panel members acknowledged the realities of institutional "turfism" as they responded to this statement.

The design that recommended a strong liberal arts component elicited a range of responses from the panel members. The human resources manager from industry rated it 2, of questionable necessity and the university vice-president and community schools director judged it "essential". While perhaps the range of responses was not surprising, it should be noted that the panel did not necessarily have access to literature supporting the liberal arts concept such as was presented as background for specific proposition 18.

The first 3 sections of the design for a postsecondary/business cooperative degree granting program were supported by the panel of experts, both for their consistency and necessity. The final section concerning financial arrangements received less general support. The design elements recommending levels of government support were controversial. The comparative indifference of the panel to the recommendations in the financial arrangements sections support the relevant specific proposition 19 that states that the financial arrangements need to be carefully articulated in the planning stages.

There was panel support of the potential for implementation of the design. Four response scores of 4 indicating that there were "deficiencies but it could be implemented" no doubt reflected the concerns about some design elements as discussed above. The fifth panel member felt that the design "approached completeness and could be implemented". The panel's overall response appeared to justify the research and the resulting design.

Further supporting and justifying the research is the growing interest in postsecondary/business cooperative ventures. During the period of the early and mid-1980s, the researcher became aware of several significant investigations of the possibility of cooperative ventures in Canada. In 1983, the writer attended a Canadian national conference whose theme was "Business and the Universities: The Need for Collaboration". While the conference speakers and delegates agreed that there was a need for collaboration if only for financial reasons, the general consensus was that without clear benefits to both being articulated, the two institutions would continue on disparate paths. The Corporate-Higher Education Forum in Montreal has representation from among prestigious educators and business leaders whose task is to encourage forms of cooperative ventures. At least one institute of technology in Alberta (the researcher's home province) is considering a major thrust of marketing off-campus programs to industry. The design developed herein was the main topic of discussion at an early 1985 meeting between institutional representatives and the writer.

Alberta Advanced Education, the provincial authority responsible for postsecondary education in Alberta, has provided some financial support for this research, reflecting the interest of senior officials in the concept outlined. The same government department is considering supporting a postsecondary/business cooperative demonstration project. In mid-1985 business and postsecondary leaders were invited to participate in a forum at which considerable support for a cooperative demonstration project was expressed. The researcher attended as representative of a provincial government department.

Based on the responses to the proposed design and the supportive literature from the field of cooperative ventures, it appears that prior to implementing a cooperative postsecondary/business program, several cautions must be observed. Generally, the cautions concern the thorough negotiations that must occur with all the constituent groups during the developmental stages. The first of these is the necessity for constructing a financial plan that is equitable and consistent with the expectations of the partners. The second caution is that development costs should be accurately forecast and financially secured during the planning stage. The third caution is a reiteration that the business partner, postsecondary leaders, and potential students should plan the course contents leading to the degree to ensure that it meets the requirements of all concerned. Of special concern may be the educational and academic expectations of the postsecondary leaders versus the specific training needs of the business partner. If there is a single business partner and that partner has a well-defined set of processes and procedures for employee training, these may be in conflict with the academic norms of the postsecondary leaders. The final caution concerns the historical suspicion that exists between higher education and the business sector and among postsecondary institutions. Without skilled intervention directed toward commitment to cooperation, an activity such as proposed in this research cannot occur.

Within the context of the reservations cited and the limitations of the study, three major conclusions seem warranted:

1. General living systems theory is sufficient to provide an adequate basis from which to construct the elements for a complex, cooperative educational endeavor.
2. The literature of cooperative higher education activities supports the timeliness of the design and its potential for implementation.
3. Even though shortcomings were noted relative to financial arrangements, the liberal arts component of the curriculum, and the consortium concept as a method of delivery, the results from the conceptual validation by the panel of experts support the design's potential for implementation.

APPENDIX

7 Glenwood Crescent
St. Albert, Alberta
T8N 1X5
June 20, 1985

Dr. W.A. Preshing
Managing Director
Management Advisory Institute
215 Central Academic Building
The University of Alberta
EDMONTON, Alberta
T6G 2G1

Dear Dr. Preshing:

Thank you for agreeing to act as a member of the panel which is reviewing "A Design for a Cooperative Postsecondary/Business Degree Program".

Enclosed is a package of material which contains the design and the method for judging it. If you have comments, in addition to your responses to the design elements, I would be pleased to incorporate them into the results. Should you have questions regarding the procedures please do not hesitate to call me collect at (403) 426-3663 during the day, or (403) 459-9716 during the evenings.

Please return the entire package to me in the enclosed stamped and addressed envelope.

Once again, I very much appreciate your willingness to review this work.

Yours truly,

Bev MacKeen
BM/sav
Encl.

SYNOPSIS OF THE DESIGN

A. Background

During the decades of the 1960s and the 1970s a new phenomenon emerged--that of significant numbers of adults engaging in educational pursuits. This phenomenon had a dual effect: educators began to attempt to increase their understanding of the adult learning process thus beginning a new field of study, and institutions of higher education began to modify programing to meet the needs of these new students.

Three additional social and economic conditions of the late 1970s and early 1980s had a profound effect on institutions of higher education. After their rapid expansion of the previous two decades, universities and colleges were forced to begin planning for a decline in traditional enrollments because of the anticipated reduced numbers of 18 to 24 year olds in the population. In the midst of that planning, a worldwide recession occurred, causing higher than usual levels of unemployment that, in some parts of North American, caused people who would not otherwise attend college or university to choose more education over employment. During this period, the third factor, decreasing resources for public programs, put additional financial strain on public education. Individually and in combination, these events led to some rethinking regarding innovative programing among educators.

During the same period of time, 1960 onward, business leaders began to recognize that provision of training and education for employees resulted in more highly skilled manpower and was a worthwhile investment. The growth in business/industry training was such that expenditures exceeded the total amount allocated for higher education in the United States alone.

As a result of the growing interest among adults for further education, the pressure on institutions of higher learning, and the training and education needs of the business complex, some attempts have been made to create postsecondary/business educational partnerships. These attempts have been fragmented and have largely failed to meet the needs of one or all of the interest groups.

Using the theoretical basis of general living systems theory, the following design for a postsecondary/business baccalaureate degree granting program was produced. An educational consortium composed of the postsecondary institutions in a region was chosen as the method of delivering a business-site educatonal program. The design contains four basic elements: the organizational blueprint, the structure, the program, and financing.

The sections that follow provide a synopsis of the proposed design elements. The theoretical base for the model is general living systems theory which provides a method of examining the parts and the whole of an organization and includes consideration of the environment in which the organization operates. Six constructs that should account for the total functioning of an organization were drawn from the theory.

An extensive review of practice in cooperative educational programs in a wide range of settings and in business education/training produced 24 specific propositions for operating a cooperative program. These propositions were organized according to the basic theoretical constructs. The constructs and specific propositions that support the various elements of the design are printed on the right hand page opposite the corresponding design elements to which they pertain.

B. Your Responses to the Design

You are now asked to judge the design and its consistency with the corresponding theoretical Constructs and cooperative programing Specific Propositions.

The design contains 22 statements. Please read each statement and judge the statement in terms of (1) its necessity in the design of an effective postsecondary/business cooperative program, and (2) its consistency with the theoretical Constructs and Specific Propositions. Item 23 asks you to judge the entire design. Please use the following scale:

Scale	Necessity for the Design of an Effective Postsecondary/ Business Cooperative Program	Consistency with the Constructs and Specific Propositions
1	It is not necessary	It is not consistent
2	Its necessity is questionable	Consistency is doubtful
3	Unable to judge	Unable to judge
4	It is necessary	It is probably consistent
5	It is essential	It is consistent

Beside the number corresponding to the Design Element are two columns. Using the scale above as a judge, please circle the number that best corresponds to your judgment for both necessity and consistency.

For example:

Model Element	Necessity	Consistency
1	1 2 3 4 5	1 2 3 4 5

C. The Design

1. The Organizational Blueprint

The design for an organization often has its basis in government policies, statues, and regulations. The blueprint of the design contains the following elements:

Necessity	Consistency	
1 2 3 4 5	1 2 3 4 5	1. State and provincial legislation governing who may confer degrees, the funding of higher education, coordinative bodies, and new program approval mechanisms will affect the creation of the program.
1 2 3 4 5	1 2 3 4 5	2. Business sector decisions to become involved in educational endeavours are rarely controlled by legal considerations.
1 2 3 4 5	1 2 3 4 5	3. An illustrative consortium mission statement is as follows: "The consortium will serve as the link between the business sector, institutions of higher learning, and workers/students through the development and delivery of business-based baccalaureate degree-granting programs that are responsive to business needs and accessible and appropriate to workers."
1 2 3 4 5	1 2 3 4 5	4. A number of consortium goals arise from the mission statement: a) The consortium will serve as a means by which the educational community and the business sector gain a greater understanding of the others' needs and goals through collectively planning educational programs. b) The consortium will provide assistance in the design of programs that are appropriate to the adult learner. c) The educational program will conform to larger educational goals of contributing to an enlightened population. d) The consortium will arrange for the delivery of educational programs at a time and place suitable to the cooperating business and its employees.

Construct One

An organization is created, often in a legal sense from the blueprint provided by other similar organizations. The organization, in turn, produces its own blueprint.

Specific Propositions That Pertain to Construct One

1. A cooperative program must reflect the legal requirements of its member organizations.

2. There must be a clear statement of the purposes and goals of a cooperative program.

3. The function of the cooperating program must be understood and acknowledged by the cooperating organizations.

4. Accreditation and quality control standards are necessary to provide the basis for the specifications of the educational program.

5. Early in the planning of a cooperative program, the various interest groups must agree on a clear definition of the meaning of the degree to be offered.

Necessity	Consistency	
		e) The consortium will ensure that business-based programs conform to existing standards requisite for the completion of a baccalaureate degree.
1 2 3 4 5	1 2 3 4 5	5. In the absence of existing accreditation organizations for off-campus cooperative programs, the quality control standards that apply to the sponsoring postsecondary constitutions must provide quality assurance for the program. The consortium should work towards the establishment of an accreditation body for business-based programs.
1 2 3 4 5	1 2 3 4 5	6. A process to determine the meaning of the degree to be offered is recommended as follows:
		a) Representatives from the business sector, the higher education community, and the student group need to be involved in the planning process.
		b) The business group can be expected to have clear needs and interests and thus will be important contributors to decisions regarding the meaning of the degree.
		c) The higher education involvement in planning the philosophical basis for the programs will establish standards necessary for the conferring of degrees and provide academic expertise to the process.
		d) The consortium contribution to philosophical decisions will include the thinking that makes adult part-time degrees different from the traditional degree.
		e) Involvement of the potential student group will provide direction regarding their needs and interests.

Construct Two

Boundaries serve to hold together the various components that make up the organization, to protect the organization from environmental stresses, and to screen information and matter-energy as they are received into the system or pass out of the system. They also contain points of interface which assist in completing transactions with the environment.

Construct Three

An organization requires a subsystem whose task it is to bring human beings, other living matter-energy, and non-living matter-energy into the system.

Construct Four

Organizations require a number of subsystems whose task it is to process matter-energy inputs that have entered the system and to transform them into suitable outputs to the environment.

Construct Five

Organizations require subsystems whose task it is to seek out appropriate information in the environment, to disseminate information to other subsystems within the organization, and to send information about the organization to the environment.

Construct Six

The group or person who performs the management function is an essential subsystem of any organization.

II. The Structure of the Consortium

The organization's role, philosophical foundation, and goals determine its structure and its relationship with the other partners. An organization chart of the proposed consortium is attached (Figure 1).

Necessity	Consistency	
1 2 3 4 5	1 2 3 4 5	7. An educational consortium model was chosen because it ensures maximum access to a wide variety of educatinal resources.
1 2 3 4 5	1 2 3 4 5	8. An advisory group to the consortium, composed or representatives from business, government labor, and the postsecondary institutions is recommended. The function of this advisory group is to provide information in respect to the needs and interests of the groups represented, and to review consortium policy and results.
1 2 3 4 5	1 2 3 4 5	9. The consortium director has the ultimate responsibility for managing and coordinating the various consortium activities and for ensuring that an adequate exchange of information occurs among the participating groups. The director should, thus, possess strong leadership skills, be able to work effectively in both academic and business communities, and demonstrate an understanding and commitment to a philosophy of adult education.
1 2 3 4 5	1 2 3 4 5	10. The program development unit will be responsible for planning curriculum, instructional delivery methods, and sequence and timing of the contents as these relate to the special learning needs of adults and the time constraints imposed by the working day of the students. Because of their expertise in adult development, members of this unit also should prepare and deliver faculty development programs in order to assure a core of instructors who specialize in adult teaching. The program development unit should have a research and evaluation component that will conduct needs assessments, regular program evaluation studies, and student course evaluations. Also, the acquisition of information pertinent to the design and delivery of adult, nontraditional educational programs should be a responsibility of research and evaluation staff.

Necessity	Consistency	
1 2 3 4 5	1 2 3 4 5	11. The business/institution's liaison unit is responsible for bringing together information and activities relating to the common interests of the educational and business partners. Two components, postsecondary affairs and business affairs are incorporated in the unit because of the need for a strong linkge between the business and educational sectors.
1 2 3 4 5	1 2 3 4 5	12. The postsecondary affairs section is responsible for recruiting and screening suitable faculty for the program. It also arranges program approval for each specific program with the degree conferring institutions. In addition, it must make prior arrangements with each institution involved in program delivery and gain prior commitment with respect to institutional costs, delivery, and course articulation.
1 2 3 4 5	1 2 3 4 5	13. The business affairs section completes the linkage between educational institutions, the business sector, and the students. An important task of this unit is marketing consortium services to individual businesses and industries. Working with human resources staff, members of this section determine staff development and skill requirements of the business and negotiate instructional space and timing of courses.
1 2 3 4 5	1 2 3 4 5	14. A student affairs capability forms part of the business affairs section. Central coordintion of all student affairs activities should occur within the consortium to ensure that each program has adequate student advisement and to accumulate student and financial data for transmittal to the appropriate sections. Each business program should have a work-site coordinator whose responsibilities include student recruitment and advisement, ongoing academic counseling, and program administration support.
1 2 3 4 5	1 2 3 4 5	15. The administration section is responsible for the financial affairs of the consortium and for developing and administering its contractual relationships with the program partners. This section must prepare yearly budget projections, and develop and maintain a system for financial control. In order to ensure that the objectives of the postsecondary and corporate partners have been fully understood and agreed upon, the relationship through the consortium should be a contractual one including details regarding services to be delivered and financial obligations of the parties involved. The administration office will develop and administer those contracts.

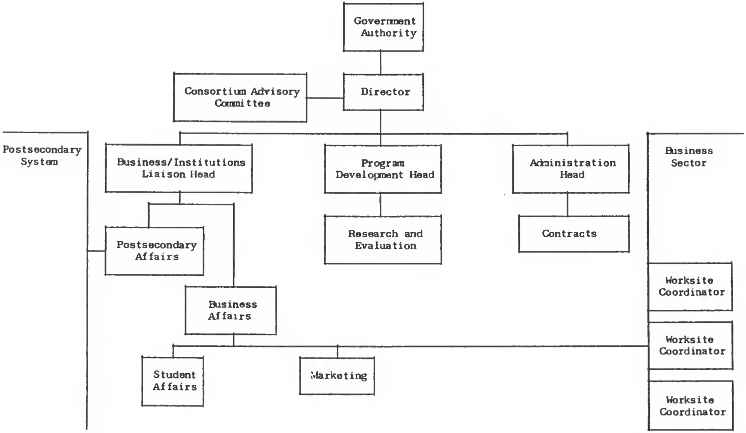

Figure 2. Organizational Chart for a Corporate/Postsecondary Educational Consortium

Specific Propositions

9. To ensure the effective implementation of a cooperative educational program, a structure must be in place that connects the educational system and the corporate system.

10. A cooperative program design must include allowances for possible divided loyalties of faculty and students.

12. To ensure that the special needs of adult student/workers are met, a dual student advisement program is necessary.

13. Quality instruction that is appropriate to adult learners is essential.

14. Since a business-based baccalaureate program does not lend itself to the traditional rewards for faculty of tenure and promotion for research and publication, other equitable reward mechanisms must exist.

15. To ensure business commitment in a cooperative baccalaureate program, the advantages to busines must be defined.

16. There must be a clearly-identifiable person or unit whose task it is to conduct environmental transations.

17. Provision must be made within a cooperative program for internal support and processing functions relative to library services, financial accounting, and student records.

18. The curriculum must reflect the interests of the sponsoring educational institution, and the needs of both the sponsoring business and the potential students.

19. The interests of the parties that provide the funding for a jointly-sponsored educational program must be carefully articulated during the planning stages.

20. To ensure an appropriate balance of activity within the organization, a method of obtaining both internal and external feedback is necessary.

22. The authority and operating relationships must be clearly defined.

23. The management subsystem for the program must include a coordinator for the host business.

24. Coordination of all the elements of an organization are essential to the success of a cooperative program that has a number of partners.

Necessity	Consistency	III. The Program
		16. The program is determined by a number of factors: the academic needs of the students, the requirement of the employers, and those of the postsecondary system. Because each business-based program will differ according to those needs, the following set of guidelines was drawn up to assist in the development of each program.
1 2 3 4 5	1 2 3 4 5	a) The program should have a strong liberal arts component that exists to contribute to the students' broadened knowledge.
1 2 3 4 5	1 2 3 4 5	b) A dual concentration of course selection; a major and minor field of study for example, should be available in order to be responsive to business and student learning requirements.
1 2 3 4 5	1 2 3 4 5	c) Instructional delivery methods should be planned using the principles of instructional methods designed from what is known about adult learning.
1 2 3 4 5	1 2 3 4 5	d) Course offerings will be scheduled around the working lives of the students, including a combination of daytime and evening classes, and weekend seminars.
1 2 3 4 5	1 2 3 4 5	e) Because the student group will not have a homogeneous educational background, developmental courses in reading, writing, and study skills must be available.
1 2 3 4 5	1 2 3 4 5	f) The degree conferring institution should agree to granting credit for a range of specific prior learning experiences.
1 2 3 4 5	1 2 3 4 5	g) The program will meet the standards of the institution necessary for completion of a degree.
1 2 3 4 5	1 2 3 4 5	h) A pre-arranged system of course articulation will be agreed upon by the cooperating postsecondary institutions.
1 2 3 4 5	1 2 3 4 5	i) Course completion requirements should be competency based.
1 2 3 4 5	1 2 3 4 5	j) In the absence of an accrediting body for nontraditional programs, a combination of quality control checks composed of the performance standards agreed upon by the regional accrediting associations in the United States and standards acceptable to the cooperating postsecondary institutions should be imposed.
1 2 3 4 5	1 2 3 4 5	k) Faculty and program development staff should undertake regular research in the areas of nontraditional programs and specific program impact.

Construct Two

Boundaries serve to hold together the various components that make up the organization, to protect the organization from environmental stresses, and to screen information and matter-energy as they are received into the system or pass out of the system. They also contain points of interface which assist in completing transactions with the environment.

Construct Three

An organization requires a subsystem whose task it is to bring human beings, other living matter-energy, and non-living matter-energy into the system.

Specific Propositions

1. A cooperative program must reflect the legal requirements of its member organizatins.

2. There must be a clear statement of the purposes and goals of a cooperative program.

3. The function of the cooperative program must be understood and acknowledged by the cooperating organizations.

4. Accreditation and quality control standards are necessary to provide the basis for the specifications of the educational program.

6. Admission standards for business-based educational programs must be clearly defined and established consistent with the special needs of the target population.

7. Criteria for grading and graduation must be consistent with the needs of the adult student.

8. The success of a cooperative educational program will be enhanced if the location of the classes is at the business site.

18. The curriculum must reflect the interests of the sponsoring educational institution, and the needs of both the sponsoring business and the potential students.

21. Cooperative program membership in relevant organizations is an essential source of information.

IV. Financial Arrangements

Funding a cooperative, nontraditional, degree-granting program requires distributing a balance of financial responsibility among the partners that reflects the interest and the potential for gain of each of the partners. Because each political jurisdiction has its own legal requirements for funding postsecondary education, no one design will apply universally. The following outline for financial arrangements, then, is intended to serve as one of an infinite number of funding plans.

Necessity	Consistency	
1 2 3 4 5	1 2 3 4 5	17. The activities of the consortium require financial support for staff, accommodation, administrative costs, and supplies and services. For the initial stages especially, program development costs will be large. In apportioning financial responsibilities, a number of indirect costs must considered: dedicated instructional space and equipment, foregone worker time, released library holdings, and maintaining accounts and student records.
1 2 3 4 5	1 2 3 4 5	18. The general benefits that accrue to the nation from higher education, and from upgrading the skills of the labor force support the recommendation that one or more orders of government bear the costs of program development.
1 2 3 4 5	1 2 3 4 5	19. Based on the rationale outline in (2) above, various orders of government should provide 50% of consortium operational costs.
1 2 3 4 5	1 2 3 4 5	20. Because student/workers stand to benefit from completing a baccalaureate degree, they should pay regular tuition costs at a rate equivalent to that paid by full-time, day-time students.

Construct Five

Organizations require subsystems whose task it is to seek out appropriate information in the environment, to disseminate information to other subsystems within the organization, and to send information about the organization to the environment.

Specific Propositions

19. The interests of the parties that provide the funding for a jointly-sponsored educational program must be carefully articulated during the planning stages.

Necessity	Consistency	
1 2 3 4 5	1 2 3 4 5	21. Postsecondary institutional contributions will be in an indirect form: provision of faculty time, library support where instruction requires it, maintenance of student and financial records, and time and expertise in budgeting and financial record keeping.
1 2 3 4 5	1 2 3 4 5	22. Based on the above portion of the financial model, approximately 25% of the cost of educational program delivery would be charged to the business contracting for the service. Also, each business partner would bear the costs involved in providing instructional space and equipment, and foregone worker time.

V. Subjective Evaluation

Part 23 requires your subjective evaluation of the design's potential for providing a complete blueprint for implementation. Please circle the number corresponding to the statement that most closely reflects your judgment on the design.

1. There are serious deficiencies and it could be implemented.
2. There are deficiencies and implementation would be difficult.
3. Unable to judge.
4. There are deficiencies but it could be implemented.
5. The design approaches completeness and it could be implemented.

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BIOGRAPHICAL SKETCH

Beverly Anne MacKeen is a native Albertan. Following completion of high school, she attended the University of Calgary where she obtained a Bachelor of Education degree. After teaching and counseling in junior high schools in Calgary for several years, she again attended the University of Calgary, this time to be awarded the degree of Master of Science in counseling psychology.

Much of Ms. MacKeen's professional association has been with the Alberta government. The initial years were spent as a vocational counselor in an adult re-training program. Subsequently, she supervised the work of four counseling centers in the southern part of the province.

Ms. MacKeen currently resides in Edmonton where she is senior program development consultant with the Alberta Department of Manpower.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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